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WORKING PLAN FOR THE CHENGLEPUT FOREST DIVISION
From 1976-77 TO 1985-86

BY

THIRU. A. SALDANHA, I.F.S.
WORKING PLAN OFFICER.

REFERENCE

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Working plan (TNFD)

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88-98

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PREFACE.

The previous Working Plan for Chingleput Division was prepared by Thiru. S.M.A. Aslam, I.F.S. and was in force from 1st April 1966 to 31st March 1976.

The field staff of this division were moved from Ramanathapuram Division, where they were working previously, to Chingleput Division towards the end of August 1974 and on completion of the field work transferred to Cuddalore Division towards the middle of November 1976.

The writer was ably assisted by Thiruvalargal N. Balakrishnan, P. Joseph, S. Thiagarajan, A. Nagarajan, B.Sc. and R. Kaliyaperumal, Range Officers from time to time and Thiruvalargal S. Thamizhmani, A. Malayalasamy, Dhanasekaran and S. Mahalingam, Foresters in the field work and collection of statistics and by Thiru T. Selvaraj, Draguhtsman in the preparation of maps.

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The writer is also indebted to Thiru P.K. Ponnusamy, I.F.S., District Forest Officer, Chingleput Division and his staff for the co-operation extended to him during the preparation of this plan.

Tiruchirappalli,
27th November 1976.

A. SALDANHA
Working Plan Officer.

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WORKING PLAN FOR THE CHINGLEPUT FOREST DIVISION FOR THE PERIOD FROM 1st APRIL 1976 to 31st MARCH 1986.

PART I.

SUMMARY OF FACTS ON WHICH PROPOSALS ARE BASED.

CHAPTER I—THE TRACT DEALT WITH.

SECTION 1—NAME AND SITUATION.

1. The working plan deals with the whole of the Chingleput Forest Division as at present constituted and is titled as THE WORKING PLAN FOR THE CHINGLEPUT FOREST DIVISION FROM 1976-77 to 1985-86.

2. The limits of the division are the same as those of the Chingleput Revenue district the area of which is 7909 square kilometres. It may not be out of place to mention here that according to the revised boundary description of Chingleput Division notified in G.O. Ms. No. 618, Agriculture, dated 1st March 1969 the city of Madras (Area — 127.68 sq. kilometres) is included in the division but this is only for the purpose of enforcing the Tamil Nadu Timber Transit Rules, 1968 in respect of Red Sanders wood, the Tamil Nadu Sandalwood Transit Rules, 1967 and the Tamil Nadu Sandalwood Possession Rules, 1970. In addition, Guindy Park Reserved Forest which is within Madras city is under the control of the Wild Life Unit, Madras. This working Plan will, therefore, deal only with the Chingleput district portion of the division unless otherwise indicated in the context.

3. The tract is situated between 12' 10' and 13 ' 35' North latitude and 73' 34' and 80' 2' East longtitude.

4. The division is consists of five territorial ranges, namely, (1) Tiruvallur with headquarters at Tiruvallur, (2) Tambaram with headquarters at Tambaram, (3) Kelambakkam with headquarters at Chingleput, (4) Chingleput with headquarters at Chingleput and (5) Madurantakam with headquarters at Tirukalikundram. In addition, there are two Farm Forestry. Ranges-with head quarters in Tiruvallur and Chingleput. The former covers all Farm Forestry area in Tiruvallur and Tiruttani taluks and also the ex-Panchayat forests in Tiruttani taluk and Pallipat sub-taluk taken over by the department while the latter covers all the other taluks of the district. There is also special staff consisting of one Ranger and two Foresters sanctioned at Tiruttani since 1972 for the survey and demarcation of the ex-Panchayat forests in Tiruttani taluk and Pallipat sub-taluk taken over by the department from the Revenue Department in 1970. This staff was sanctioned under the Five-Year Plan Scheme of 'Forest Consolidation' in G.O. Ms. No. 1066, Agriculture, dated 6th April 1972.

5. *Etymology of the name.*—The name Chingleput is an anglicised distortion of the original name Sengalunirpattu (or water-lilly brook) which reveals that in bygone days the district abounded in numerous perennial streams.

SECTION 2 — CONFIGURATION OF THE GROUND.

6. This division is for the most part a flat coastal plain sloping gently from the west towards the eastern seaboard. Along the coastline there are a few said hills formed as a result of brown sand. Behind the sea coast ridge of said dues lies a net work of lagoons or backwaters connected by the Buckingham canal, which runs parallel to the coastline from the south to the north of the division and allows of navigation by country craft. The monotonously flat inland terrain is interspersed with the comparatively extensive and low ridged Allikuli hills in the north, a whole lot of scattered barren hills in the north-west and small scattered scrub forested hills in the south.

7. *Regional types.*—The forests of the division can be categorised physiographically into two regional types, viz., the Plains and the Hill forests.

8. *The Plains Forests.*—The bulk of the forest area of the division is siuated in the plains which are charactarised by nearly level stretches of land traversed by rivers and streams which feed many tanks under which wet cultivation is practised. Many of the reserved forests situated in the plains also contain small isolated hillocks, e.g., Thirukalikundram, Vandalur, Acharapakkam and Pulikaradu Reserved Forests. An interesting feature of these forests is that they have mostly been converted into commercially valuable Cashew and Eucalyptus plantations during the past two decades.

9. *The Hill Forests.*—Allikuli hills in the western part of the Ponneri taluk, which form part of the Eastern Ghats, is about the only hill forest tract in this division. Most of the hill forests support little vegetation of any commercial importance. The valleys and sheltered slopes of Allikuli support vegetation consisting of species like Albizzia amara, Canthium didymum and a few scattered saplings of Santalum album. Some of the exposed slopes like Acharapakkam and Paranur Reserved Forests now bear poor thorny growth. Certain hill forests like Hanumanthaputheri and Valluvapakkam Reserved Forests are bouldery to rocky and support nothing much of importance or value by way of vegetation.

10. The ex-Panchayat forests in Tiruttani and Pallipat sub-taluk which comprise of scattered hills are all almost barren and badly eroded for the most part with degraded thorny species.

11. *Rivers and Streams.*—The river system is simple. As the general drainage of the land is towards the coast, all the rivers and streams drain into the Bay of Bengal. The main rivers of the division from north to south are the Araniar, Kortalaiyar and Palar. The Cooum and Adayar, though by no means large are two well known rivers of the district. The Killiyar and Kallai are two small and lesser known rivers in Madurantakam taluk. The Allikuli stream, which takes its source in and has as its catchment in Allikuli Reserved Forest, is a tributary of the Kortalaiyar.

12. The Araniar originats in Puttur Taluk of Chittoor district of Andhra Pradesh, and in Chingleput district it flows through Tiruvallur and Ponneri taluks and enters the sea through the Pulicat lake. Almost all its waters are harnessed for irrigation through a series of anicuts constructed across it.

13. The Kortalaiyur also known as the Kosathalaiyar has its source from the surplus of the Kaveripakkam tank in North Arcot district and flows through Tiruvallur and Ponneri taluks. It feeds the Poondi reservoir, Cholavaram tank and Red Hills lake all of which are used for supplying drinking water to Madras City. It also feeds the Chembarambakkam irrigation tank through a part of the Cooum river. It empties itself into the back waters at Ennore.

14. The Palar which has its source in Kolar district of Karnataka enters the division a few kilometres west of Kancheepuram and is by far the biggest river in the division though capricious and uncertain by nature and liable to heavy freshes and long drought at intervals. It has a heavy fall and consequently a strong current. It is also known for its subsoil currents which acord water-supply even during years of drought, It is joined at Thirumukkudal in Kancheepuram taluk by the Cheyyar river, also flowing from North Arcot district and by the Vegavathi river in the same taluk. It then flows in a south-easterly direction for about 48.28 kilometres forming the boundary between Kancheepuram and Chingleput taluks and lower down between Madurantakam and Chingleput taluks and finally enters the Bay of Bengal near Sathurangapattinam. The river feeds a large number of irrigation tanks for which it is harnessed through a series of anicuts constructed across it. It is also tapped for supplying drinking water to Chingleput and Tambaram.

15. The Cooum flows through Tiruvallur, Sriperumbudur and Saidapet taluks and enters the sea at Madras.

16. The Adayar takes shape at Guduvancheri and flows between Sriperumbudur and Saidapet taluks and enters the sea at Adayar.

17. *Irrigation tanks.*—The number of irrigation tanks in the division is 4,324 with a registered ayacut of 1957.18 square kilometre and 64,391 ordinary wells and 1,072 bore wells with an irrigable area of 3,154 square kilometre. The tanks are fed by rivers and rain and some of them have nearby reserved forests as their catchment areas. In such cases the cattle which resort to the forests for grazing resort to these tanks for drinking water as no other water source is available to them. Among the large tanks are Chembaramkappam, Palur Chitteri and Palaiyeri, Theneri, Utiramerur, Madurantakam, Perumperkandigai, Pallavankolathur, Thirumalisai, Sriperumbudur, Manimangalam, Madur, Kattur, Ambattur, Menambeduthangal, Cooumeri and Chembeduperiaeri.

18. A relatively small but important from the forest point of view is the 29.94 ha. Vedanthangal tank trucked away about 83 kilomeres south of Madras in Madurantakam taluk. It is a Water Birds' Sanctuary under the control of the Wild Life wing of the department. It is dealt with in greater detail later.

SECTION 3—GEOLOGY, ROCK AND SOIL.

19. Geology and Rock.—The tract is geologically divided into three broad classifications:—

(i) Metamorphic rock consisting mainly of gneiss, hornblende charnokite and quartizite;

(ii) the aqueous rocks, of which the most common is laterite in various stages of formation, super-imposed on the metamorphic rocks;

(iii) the alluvial deposits which occur along the river banks, deltas, and the coastal and backwater areas.

20. The Upper Goodawana system exhibited round about Sriperubudur consists of the Sriperumbudur buff coloured shales and clays containing plant remains of Gangamopteris and Glossopteris. The upper stage found near the north-western part of the division consists of purple mottled ferruginous sand-stone conglomerates which contain fragmentary plant fossils.

21. *Soils.*—Five types of soil are met with. They are :—

(i) Red loamy.

(ii) Sandy.

(iii) Lateritic.

(iv) Clayey.

(v) Kallar.

22. *Red Loamy Soil.*—This type of soil is met with largely in the inland forests where the tree growth is profuse. The depth of such soil however, varies from a few centimetres to five metres in places. It is deep in the plains and becomes superficial in hilly areas. Although poor in humus content, it has a high moisture retentive capacity. The existence of red soil in the reserved forests has given eminent results in regeneration works, especially of cashew.

23. *Sandy soil.*—This type of soil occurs in the coastal reserved forests and reserved lands, either in admixture with red soil or in admixture with silt or Kallar. The moisture retentive capacity is therefore, dependant on these associated soils. Where the mixture has been with silt as in Maiyur Reserved Forest, the growth of Cashew and Eucalypt has been satisfactory.

24. *Lateritic soil.*—This type of soil is commonly seen in Ponneri and Tiruvallur taluks in all the stages of formation, viz., lithomarge to laterite. Though very little vegetation comes up on hard lateritic soil, the intermediate stages support vegetation as in the case of Erumaivettipalayam Reserved Forest. Some of the Cashew plantations thrive well on such intermediate soils.

25. *Clayey soil.*—This type of soil occurs in a scattered manner in some of the reserves like Thirukalikundram and Edamachi. In view of the preponderance of clay over sand the drainage conditions are poor. In such localities species like Phoenix humilis and Imperata grass are found to thrive.

26. *Kallar soil.*—This type of soil occurs in the major portions of some reserves like Kattugudalur, Perungoli, Marutham, Kolathur and Maiyur.. The rich carbonates, sulphates and chlorides of sodium of Kallar soil inhibit the growth of vegetation.

27. *Depth of soil.*—The depth of soil is very largely a function of the steepness of the locality and the degree of conservation of the vegetal cover. On eroded hill slopes it is negligible but where erosion has not set in it is as much as a metre deep as is seen from soil profiles exposed at quarry sites. In the plains the depth of soil varies with the nature of the vegetal cover and the extent of erosion. Thus while the top soil may be completely eroded away in open patches or metamorphosed into laterite in some places, in other places the depth of the soil mav be asmuch as one metre.

28. Along the sea coast the sand deposits vary upto 10.0 metres or more in depth.

29. *Drainage.*—The surface drainage is fairly good throughout though the sub-soil drainage is variable depending on the nature of the soil. Water-logging of sites containing clayey and kallar soils takes place during the monsoon.

SECTION 4—CLIMATE AND RAINFALL

30. *Climate.*—Presenting no extremes of heat and cold, the climate is typically coastal. The hottest period is between April and June. The effect of the sea breeze which tempers the extreme heat is less pronounced in the western part of the district than in the coastal areas in the east. The average maximum and the average minimum temperatures are 28.3' C and 21.4' C respectively. Generally the climate is healthy.

31. *Rainfall.*—The average rainfall for the district for the past ten years from 1966 to 1975 is 895,76 M.M. and in a normal year 1,207.8. The principal monsoon is the north-east. The south-west monsoon is of comparatively less importance. The first showers of this monsoon are usually expected about the middle of June but they are intermittent and uncertain and it is not until July that rain can usually be counted on. Showery weather continues through August and September. Then the south-west winds recede leaving the atmosphere sultry and oppressive until about the middle of October when the north-east monsoon sets in. It begins with very heavy rainfall and afterwards showers continue generally till the middle or end of December. This monsoon is of great importance from the forest point of view as plantations raised during the south-west monsoon depend on this monsoon to establish themselves and if it fails casualties are heavy.

32. The south-west monsoon is generally heavier in the south than in the north and the north-east monsoon is heavier along the coast than in the interior.

33. A statement showing the monthly rainfall in millimetres and number of rainy days recorded at the various rain gague stations in Chingleput district between 1966 and 1975, both years inclusive, is furnished in Appendix I. The statements showing the normal monthly rainfall data in millimetres and the number of rainy days is furnished in the subjoined statement.

STATEMENT SHOWING THE NORMAL RAINFALL DATA (IN MILLIMETERS) FOR THE VARIOUS STATIONS IN CHINGLEPUT DISTRICT.

Serial number. (1)	*Stations.* (2)	*January.* (3)	*February.* (4)	*March* (5)	*April.* (6)	*May.* (7)	*June.* (8)	*July.* (9)	*August.* (10)	*September.* (11)	*October.* (12)	*November.* (13)	*December.* (14)	*Annual Total.* (15)
1.	Cheyyar	45.5	12·7	17.3	21.3	31.5	36.6	75.2	129.9	130.1	256.0	345.7	138.7	1239.9
2.	Kancheepuram	33.3	9.9	13.5	18.0	53.6	67.6	102.4	144.0	145.5	208.9	222.3	94.7	1113.0
3.	Covelong	50.5	16.0	16.3	13.2	31.0	46.7	92·5	131.3	140.7	302.3	329.4	136.9	1307.8
4.	Meenambakkam	45.5	12·6	13.2	17.5	37.9	44.7	86.6	113.0	119.4	305.8	350.3	139.2	1285.6
5.	Saidapet	48.3	13.7	15.5	16.5	35.8	44.2	86.9	123.7	126.5	302.8	362.7	138.9	1315.5
6.	Ponneri	42.9	10.4	15.0	14.0	34.5	47.7	79.3	100.6	117.9	289.1	355.6	134.4	1241.4
7.	Tirutani	44.2	16.3	11.7	16.3	38.9	54.4	96.0	110.0	126.0	258.8	301.7	113.5	1187.8
8.	Sriperumbudur	37.3	7.6	9.9	18.8	37.9	55.1	86.9	129.5	130.8	202.2	243.1	102.9	1062.0
9.	Uthiramerur	35.8	15.2	15.2	21.3	46.0	59.7	99.1	154.2	161.3	203.7	243.1	112.0	1166.6
10.	Madurantagam	42·9	10.9	14.0	23.6	46.0	42.9	92.5	143.9	168.7	227.8	291.3	138.9	1242.5
11.	Thiruvellore	43.3	13.2	12.7	16.0	42.7	54.6	95.8	123.9	143.3	213.1	247.1	106.9	1112.7
12·	Chingleput	37.9	10.7	13.5	21.1	36.8	51.8	97.8	141.7	159.8	233.2	273.6	135.1	1213.

STATEMENT SHOWING THE NORMAL NUMBER OF RAINY DAY.

1.	Cheyyar	2.3	0.9	0.8	1·2	1.3	2,9	5.8	7.4	7.1	10.5	10.9	5.4	56.5
2.	Kancheepuram	1.8	0.6	0.7	0.8	2.0	4.3	6.5	7.9	7.7	8.9	9.6	4.0	54.8
3.	Covelong	2,4	0.9	0.8	1.1	1.2	3.6	6.6	8.3	6.7	10.7	10.7	5.5	58.5
4.	Meenambakkam	2.1	0.8	0.6	1.0	1.3	3.8	6.7	7.8	7.3	10.4	10.8	5.4	58.0
5.	Saidapet	2.0	0.6	0·5	0.9	1.3	3.6	6.3	7.1	6.7	10.1	10.3	4.9	54.3
6.	Ponneri	1.8	0.6	0.6	0.9	1.3	3.7	6.3	6.8	6·5	9.6	10.6	4. 8	53.9
7.	Tiruttani	1.9	0.7	0.6	0.9	1.9	4.0	6.6	6.7	6.9	9.3	9.3	4.0	52.8
8.	Sriperumpudur	1.5	0.6	0.5	1.0	1.9	3.9	6.2	7.7	7.1	9.1	9.1	4.2	52.8
9.	Uthiramerur	1.7	0.7	0.6	1.1	2.1	3.9	6.4	8.3	7.6	8.7	8.9	4.4	54.4
10·	Madurantagam	2.1	0.7	0.7	1.0	1.9	3.4	6.1	8.0	7.8	9.6	9.9	5.1	56.3
11.	Tiruvellur	1.8	0.8	0.6	0.9	2·1	4.7	7.2	8.1	8.0	9.4	8.8	4.4	56.8
12.	Chingleput	2,0	0.8	0.8	1.1	1.6	3.5	6.3	7.8	7.4	9.7	9.9	4.8	55.7

34. *Health.*—Fillariasis Cholera and Guinea worm infestation are among the common serious diseases endemic in the division. While the first occurs almost throughout the division, the second occurs in Madurantakam, Chingleput, Tiruttani, Kancheepuram and Saidapet taluks and the last named in Chingleput and Madurantakam taluks.

The incidence of the diseases is however, not heavy and the division on the whole can be said to be fairly healthy.

SECTION—5 WATER SUPPLY.

35. Tanks from the principal source of water-supply, every village having one or more of them. They are fed by the rivers referred to in paragraphs 11 to 16 and numerous small streams during the north-east monsoon and hold water for about six months in the year. Wells, mostly fitted with electric pump-sets, constitute another source of water-supply. As they supply water round the year they come in handy in meeting the needs of the population in periods of extreme drought. They supplement irrigation under small tanks even in ordinary years especially before and after the monsoon or in its absence. They also irrigate a considerable proportion of the dry lands. The digging of wells is encouraged by the grant of Government loans.

36. The Palar river, in particular, has undercurrents which supply water even in years of drought and this source is being tapped for augmenting the water-supply to Tambaram besides meeting the requirements of Chingleput town.

37. Good springs exist in the villages adjoining the sea coast and the Palar. There are also fairly good springs in all the other parts of the division.

38. The only important water source in reserved forests is the Allikuli stream in Allikuli Reserved Forest. There are also some small tanks in the forests which are rainfed and contain water for six months in the year for watering cattle that resort to the forests for grazing.

39. There are 17 wells in the division and a list of the same is furnished in section 3 of Chapter V of Part I.

SECTION 6—DISTRIBUTION AND AREA.

✓ 40. The area under forests in the division is 444.07 sq.km, as on 31st March 1976 and is classified as follows:—

Reserved Forests—301.13 sq. km.
Reserved Lands—142.94 sq. km.

✓ 41. The division is divided into five territorial ranges, namely: (1) Tiruvallur, (2) Tambaram, (3) Kelambakkam, (4) Chingleput and (5) Madurantakam. A peculiar feature of this division is the multitude of small forest blocks lying scattered all over the plains rendering management rather laborious. The distribution of the aforesaid categories of forest in the five ranges is as follows:—

Name of Range.	*Area in square kilometres.*		
	Reserved Forests.	*Reserved Lands.*	*Total.*
(1)	(2)	(3)	(4)
Tiruvallur	81·52	129·81	211·33
Tambaram	53·64	..	53·64
Kelambakkam	57·36	1·96	59·32
Chingleput	47·35	..	47·35
Madurantakam	61·26	11·17	72·43
Total	301·13	142·94	444·07

42. In addition there are two Ranges sanctioned to implement the Farm Forestry scheme, one with headquarters at Tiruvallur and the other at Chingleput. They were sanctioned in G.O. Ms. 3326, Food and Agriculture, dated 3rd October 1960 and have been functioning from 1st April 1961.

43. There is also one Ranger sanctioned under the scheme of Forest consolidation with headquarters at Tiruttani to survey and demarcate the Panchayat lands taken over from the Revenue Department in 1970 in Tiruttani Taluk and Pallipat Sub-Taluk.

44. A list of reserved Forests and Reserved lands in the division with details of their extent etc. and indicating the stage at which the reservation of each Reserved Land is pending is furnished in appendix II.

Section 7—State of Boundaries.

45. The boundaries of the division are natural as in the case of the sea on the eastern boundary and artificial on the southern, western and northern borders. A description of the boundary as notified in G.O. Ms. No. 618. Agriculture dated 1st March 1969 is furnished hereunder.

North.—Starting from the trijunction point of North Arcot district and Chingleput district with Andhra Pradesh, the boundary runs along the frontier boundary between Tamilnadu and Andhra Pradesh to meet the Bay of Bengal at the trijunction point of Andhra Pradesh, Chingleput district and Bay of Bengal.

East.—Thence the boundary runs west along the common district boundary between South Arcot and Chingleput till it meets the trijunction point of Chingleput, South Arcot and North Arcot Districts.

West.—Thence the boundary runs generally north along the common district boundary between Chingleput and North Arcot to the starting point.

46. All the Reserved Forests in the division are demarcated with cairns and cleared lines.

47. Except for Allikuli Reserved Forests which is a class I.R.F. that has been under the control of this department all along, the rest of the Reserved Forests were either ex-Zamin or ex-Inam forests and when they were under Panchayat control between 1923 and 1945 the maintenance of their boundaries was badly neglected. Consequently a number of discrepancies and encroachments had taken place. These were set out in appendices XX to XXI respectively of the previous working plan and it was stipulated that the rectification of the defects should be taken up in a phased manned and completed during the currency of that plan. A certain amount of work in this connection was done between 1969 and 1972 at a cost of Rs. 1,740.00. Reasons for stopping the work after 1972 are not available. The work that remains to be done is prescribed under the chapter of Miscellaneous Regulations to be executed during the period of this working plan.

48. *Inter-state boundary.*—The only stretch of inter-state forest boundary in the division that is, between Tamil Nadu and Andhra Pradesh, lies in Pullikundram R.L. and Allikuli R.F. of Tiruvallur Range. The length of the boundary is about 8.85 km. (440 chains) and its width 6.10 metres (20 feet). This boundary which came into being in April 1960 as a result of the Pataskar award was cleared for the first time and demarcated at a cost of Rs. 1000.00 in 1969-70. The expenditure was sanctioned in G.O. Ms. No. 91, Agriculture Department, dated 11th January 1969. The cairns used in the demarcation consist of loosely heaped boulders and are not as per specifications laid down in the Tamil Nadu Forest Manual. This defect will have to be rectified. The line is also now in need of clearance. The proceuure to be followed in the maintenance of this line and sharing the cost of the work with the neighbouring state is laid down in Proceedings Misc. No. 230, dated 16th March 1953 of the Board of Revenue, Madras.

Section 8—Legal Status.

49. *Reserved Forests.*—There are 68 Reserved Forests which are the absolute property of the state. The section 16 notification for each of the reserves is recorded in the register of reserves maintained in the District Forest Office.

50. *Reserved Lands.*—Reserved Lands in the division are scattered over 52 Blocks. The number of blocks Range-war in respect of which the notification under section 4 has been issued and the number of blocks in respect of which only the notification under section 26 has been issued is furnished in the subjoined statement.

Name of Range.	*No. of blocks notified under section 4.*	*No. of blocks notified under section 26.*	*Total.*
(1)	(2)	(3)	(4)
Tiruvallur	12	20	42
Tambaram	Nil.	Nil.	Nil.
Kelambakkam	2	Nil.	2
Chingleput	Nil.	Nil.	Nil.
Madurantakam	11	Nil.	11
Total ..	25	30	55

N.B.—The above figures are exclusive of the blocks handed over to the Revenue Department.

51. *Lands permanently handed over to other departments.*—During the period of the previous plan four bits of forest land totalling 2.93 sq. km. were handed over to other departments of Government. A list of such lands with details such as extent, department to which handed over, purpose for which handed over and authority for handing over is furnished in appendix III.

Section 9—Rights and Concessions.

52. *Reserved Forests.*—The rights and concessions in the Reserved Forests have been furnished in the respective section 16 notification for each reserve which has been recorded in the register of reserves maintained in the District Forest Office.

53. *Reserved Lands.*—The rights and concessions to be admitted in the Reserved Lands will be determined at the time of settlement.

CHAPTER II—THE FOREST

Section 1—Composition and condition of the Crop.

54. *General.*—The natural forests of the division contain for the most part only scrub vegetation. These are composed of mixed deciduous and dry evergreen species stunted in height and of small girth characteristic of a tropical semi-arid coastal tract. They have no intrinsic commercial value except serving as cheap faggot wood. The density is extremely low and the soil often exposed. The poverty of the forests in the result of prolonged maladministration for several decades during the Panchayat regime. Mention, however, deserves to be made of the successful conversion of about 173.88 square kilometres of plains portions of forests into man-made forest of commercial utility through artificial regeneration during the last two decades.

✓ 55. *Forest types*—The following natural forest types as per the classification of Champion and Seth, are identifiable in the division at present:

(i) *Group* 5.—Tropical Dry Deciduous Forests— Sub-group 5 A. Southern tropical dry deciduous forests — C3 Southern dry mixed deciduous forest.

(ii) *Group* 6—Tropical Thorn Forests — Sub-group 6 A. Southern tropical thorn forests — DSI southern thorn scrub.

(iii) *Group* 6—Tropical Thorn Forests — Sub-group 6 A. Southern tropical thorn forests — DS2 Southern Euphorbia scrub.

(iv) *Group* 7.—Tropical Dry Evergreen Forests — DSI Tropical dry evergreen scrub.

✓ 56. 5—5*A*. *C3 Southern dry mixed deciduous forest*.—

Description.—This is a degraded form of the climax dry mixed deciduous forest. It consists of over worked fuel coupes which have not been adequately protected from men and cattle after clarfelling. The present growth consists of coppice growth 1 m. to 2m. in height amidst thickets of thorny shrubs. The ground is covered with thin grass.

Floristics—Trees — Albizzia amara, A. lebbek, Aeacia leucophloea, A. Sundra, Azadirachta indica, Chloroxylon sweitenia, Pterocarpus Santalinus, Limonia erenulata, Diospyrus montana, etc.

Shrubs—Randia dumetorum, Carissa congesta Zinzphus xylopyrus, Z. oenoplia, Cassia auriculata, Euphorbia spp. etc.

Climbers—Abrus precatorius, Pterolobium indicum, etc.

Distribution—Allikuli R.F.

✓ 57. 6-6 *A*. *DS1 Southern thorn scrub*—

Description—This is a degraded form of the southern thorn forest as a result of maltreatment. It consists of close thorny thickets 1m. to 2m. high with a few surviving trees standing out here and there.

Floristics.—Trees — Albizzia amara, Acacia lencophloea, Azadirachta indica, Chlorozylon sweitenia, Wrightia tinctoria, Lannea coromandelica, etc.

Shrubs—Zizyphus xylopyrus, Z. oenoplia, Dicrostachys cinerea, Capparis divaricata, Randia dumetorum Canthium dicoccum, Flacourtia indica, etc.

Climbers—*Pterolobium* indicum, etc.

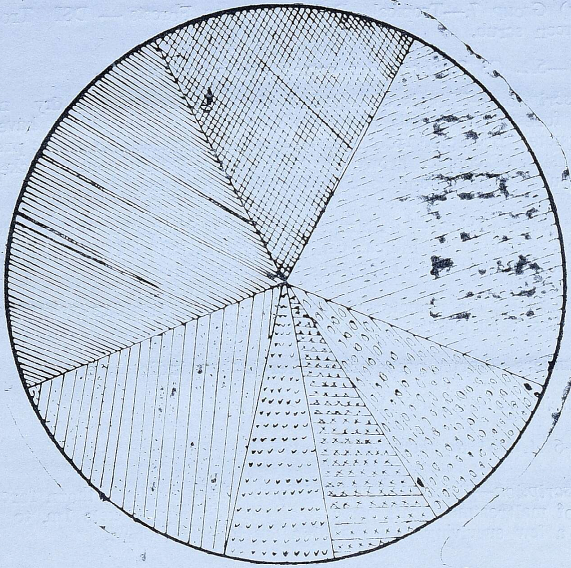
Distribution—Marudam R.F., Kolathur R.F., Kattugudalur R.F. etc.

✓ 58. 6—6*A*. *DS2 Southern Euphorbia scrub*—

Description and floristics—A very open formation in which fleshy Euphorbias are the most important constituent. The thorny Acacias and their associates low rousded bushes. Much of the soil is bare but there is usually a cover of wiry grasses. The type represents both extreme edaphic conditions — badly eroded, very rocky and with soil in crevices — as well as the ultimate stage in degradation.

Distribution—Reserved lands in Tiruttani Taluk and Pallipat sub-Taluk in Tiruvallur Range, Tambaram R.F. Erumaiyur R.F., Pullarambakkam R.F. etc.

CHART SHOWING THE DISTRIBUTION OF THE VARIOUS FOREST TYPES IN THE DIVISION WITH THE FULL CIRCLE REPRESENTING THE TOTAL FOREST AREA OF THE DIVISION



SYMBOL	DETAILS OF FOREST TYPES	AREA IN SQ KM	PERCENTAGE TO THE TOTAL FOREST AREA
✓	5AC3 SOUTHERN DRY MIXED DECIDUOUS	26.17	5.89
▨	6A&DS1 SOUTHERN THORN SCRUB	66.91	15.07
▨	6A.DS2 SOUTHERN EUPHORBIA SCRUB	105.95	23.85
▩	7 DS1 TROPICAL DRY EVERGREEN SCRUB	71.16	16.03
▨	CASHEW PLANTATIONS	103.67	23.36
▨	EUCALYPT PLANTATIONS	43.98	9.90
▨	OTHER PLANTATIONS	26.23	5.90
	TOTAL FOREST AREA	444.07	100.00

446.65

✓ 59. 7—*DS1 Tropical dry evergreen scrub*—

Description—This is a degraded form of the tropical dry evergreen type, which once abounded in the division, where the trees have mostly disappeared leaving thorny shrubs with thin grass.

Floristics—Trees — Azadirachta indica, Eugenia jambolana, Memecylon edule, Maba buxifolia, etc. ✓

Shrubs—Carissa spinarum, Dichrostachys cinerea, Zizyphus species.

Climbers—Asparagus racemosus, Derris scandens, Acacia intsia, etc.

Distribution—Vandalur R.F., Vallam R.F., Nemmeli R.F., etc.

60. *Sandal*—Sandal was introduced in 1916 in Allikuli R.F. Details of the work done in this connection are not available at this distance of time. The present position is that about sixty seven saplings exist in Mungathamma locality of the now defunct Krishnareddikona fuel series.

61. A list of plantations in the division and the flora of the division are furnished in appendices IV and VI respectively.

62. A chart depicting the natural forest types and artificially raised plantations of Cashew, Eucalypt and other species in the division is furnished in the opposite page.

Section 2—Injuries to which the crop is liable.

63. *Climate*.—The Chief climatic factor to be viewed from the forest point of view is the failure, partial or total, of the monsoons. The south-west monsoon though of relatively less intensity heralds the growing season and commencement of regeneration operations commencement of regeneration operations besides adding to the oppressiveness of the summer heat. Failure of the north-east monsoon on the other hand results in severe drought which leaves failed plantations and near famine in its wake as happened in the year 1974-75. The late appearance of this monsoon is said to result in floods with its attendant evil of soil erosion.

64. *Wind*.—Hot desiccating gales sweep the division during summer aggravating the arid conditions that normally prevail during this period and rendering the survival of young plantations extremely precarious. The remedy lies in earlyplanting, using large sized planting material and resorting to deeper planting by digging large sized pits.

65. The tract is prone to cyclones during the north-east monsoon but they are not known to have caused any damage to the forests. Except for some temporary dislocation that they cause in the habitation and communications, these cyclones bring with them a lot of much needed rain to replenish drinking and irrigation resources and aquifers.

66. *Fire*.—Incidence of fires in the division is low thanks to the predominance of Memecylon edule, Carissa spinarum and other evergreen shrubs and a lack of combustible materials cause of illicit collection of faggot wood and fallen Eucalypt leaves by the villagers. The position in the reserved lands in the north-western portion of the division is, however, different. Here, there is widespread and annual burning of the grassy hill slopes by graziers for the sake of the tender grass that sprouts after such fires and a few showers. A statement showing the incidence of fires in the division is furnished in the subjoined statement. The vulnerable period for fires is the summer months of March to May.

STATEMENT OF ANNUAL INCIDENCE OF FIRES.

	Number of fires.												Annual total.	Total are burnt in hectares.
Month Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1966 ..	..	..	1	..	..	..	..	..	..	..	..	..	1	40·46
1967 ..	..	..	..	..	..	..	1	..	1	..	..	..	2	1·37
1968 ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil.	
1969 ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil.	
1970 ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil.	
1971 ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil.	
1972 ..	..	..	..	1	..	..	..	..	..	..	..	..	1	4·85
1973 ..	..	..	..	..	2	..	..	..	..	..	..	..	2	2,63
1974 ..	..	..	..	..	2	..	..	..	..	..	..	..	2	1·[illegible]
1975 ..	..	1	1	..	..	..	..	..	..	..	..	..	2	[illegible]

67. *Injurious plants.*—Cymbopogan coloratus that occurs in the hilly reserved lands around Tiruttani in Tiruvallur Range is burnt annually by graziers in summer to induce tender grass for their cattle. This repeated burning through the ages coupled with unrestricted felling of the tree growth has resulted in almost complete denudation and erosion of these hills. When mature, small quantities of this grass are exploited by the local villagers for tatching purposes. The grass is injurious not merely because of the fire hazard that it poses but also because it saps the little nutrition in the soil and physically obstructs regeneration. To its credit must, however, be ascribed the fact that despite its many drabacks it has so far defied persistant devastation by man and his cattle and provided these hills with some verdure. The artificial reafforestation of these hills which will result in a reduction of the incidence of this grass is being prescribed in this plan. Incidentally, the oil (obtained by steam distillation) of this aromatic and xerophytic grass, though inferior to lemongrass oil can be used for perfuming soaps.

68. Creepers and climbers are particularly destructive and were found predominantly in Cashew plantations. Their incidence is, however, not very high now because of the practice of periodic uprootal and ploughing carried out during the life of the plantation. The climbers most commonly found are Cassitha filliformis, Hemidesmusindica and Acacia intsia. The first named climber branches profusely, encircles young plants and kills them out completely in fifteen to twenty days. The others spread themselves over the entire tree retarding its growth as well as yield. The few young Casuarina plantations in the division are also subject to infestation and mortality by climbers. The remedy lies in always keeping plantations free of climbers instead of waiting for the sanction of the periodical tending estimate.

69. *Insects.*—The Teak defoliator Hyblaea puera and the Teak skeletoniser Hapalia machaeralis are both present in the small area of Teak plantations of the division.

70. Casuarina is subject to attack by some insect and fungous pests but since the attacks are only sporadic no serious anti-pest measures are called for. Grubs of the rhinoceros beetle, oryctes rhinoceros bore through the stems of seedlings and cause drying up of the tips of the effected seedling. The grubs of Coelosterna seabrata, a longicorn, bore into the roots of the species. The uprootal and removal of the attacked trees is the best way to eradicate the pest. The borer Phasus malabaricus bores the stems close to the ground. Plugging the bore hole with a blob of tar kills the caterpillar in the gallery. Trichosporium vesiculosum, a root fungus is a dreaded pest of the species.

71. The pests of Cashew are numerous though not all of them are found to occur in the division. The more important of them are dealt with briefly below:

(i) Shoot tip and infloresence caterpillars:

(1) *Chelaria haligramma*—A small yellowish or greenish caterpillar which feeds on shoot tips and the inflorescence. Due to the injury the growth points get stunted and dry up.

(2) *Anarsiaepotias.*—A caterpillar that causes damage to tender shoots. The infested shoots exude resinous gummy substance and dry up.

(ii) *Apple and nut borer.*—Thylocoptila panrosema—A borer that feeds on tender tissues at the junction of the apple and nut.

Control.—Endosulfan 0.05 per cent spray.

(iii) *Leaf miner.*—Acrocercops syngramma—A small pale, white caterpillar that mines through tender leaves at the time of new flushes. The injury consists of tortuous making made on fresh leaves. In the mined areas the thin epidrmal part swells up as blistered patches. Is older leaves the damage is manifested as holes.

Control—Endosulfan 0.05 per cent spray or

Phosphamidon 0.05 per cent spray.

(iv) Thrips;

(1) Selenothrips rubrocinctus.

(2) Rhipiphorothrips cruentatus.

(3) Retithrips syriacus.

The thrips attack tender leaves of nursery seedings and young plants in the field particularly during summer months.

Control—Endosulfan 0.05 per cent spray on the lower surface of leaves.

(v) Leaf and blossom webber—Macalla moncusalis—A caterpillar that webs the leaves shoot and infloresence, remains inside and feeds on them.

Control—Spraying with 0.2 per cent BHC or 0.05 per cent fenitrothion at the time of new flush and blossom stages.

(vi) Tea mosquito—Helopeltis antonii—A reddish brown bug which sucks the sap from tender shoots, leaves, floral branches, tender apples and immature nuts. The tissues around the point of entry of the suctorial mouth parts (stylets) of the bug develop drawn necrotic lesions which coalesce finally resulting in drying of the tender shoots. When floral bunches are infested it results in infloresence blight. The peak period of pest abundance is mid-January when the trees are in full blossom.

Control.—Endosulfan 0.05 per cent spray. First spray during September-October, second during November-December and third at the time of fruit set in January-February.

(vii) Stem borer—Plocaederus ferrugineus.—The adult is a medium sized dark brown longicorn beede which lays eggs in live tissues in the crevices of loose bark in trunk and root zones The grubs bore into the brak, feed on the sub-epidermal tissues tunnelling in irregular directions. Some of the symptoms of infestation are gummosis, extrusion of frass through holes, yellowing of leaves, shedding of leaves, drying of twigs and finally mortality of the tree.

Control.—(1) Mechanical removal of the attacked tissues with the pest in the early stages and swabbing the trunk asd root zone with 0.1 per cent B.HC.

(2) Injection of affected trees with 1 per cent carbaryl or application of 10 grams. Phorate granules or Aluminium phosphate tablets to the bore holes.

72. *Animals.*—No problem of forest conservancy is more actute in Chingleput division than that of grazing. The existence of numerous villages near the Reserved Forests and the unrestricted rights the people enjoyed during the Panchayat regime have had apositively destructive influence on the forest wealth of the tracts. The obvious evils of excessive grazing, such as the compaction of the surface soil, the conseuent failure of natural regeneration and the destruction of tender seedlings by catle are noticeable in all parts of the forests. The tract being arid, sheep and goat rearing which is a paying proposition, is practised on a considerable scale and though goat browsing is prohibited goats continue to make in-roads into the forests. Unless there is effective patrolling by the protective staff coupled with infliction of heavy penalties on the offenders the menace is likely to persist.

73. *Man.*—Situated as the forests are close to cultivation on the populous plains and Madras City the incidence of theft of forest produce is heavy. Protection is particularly difficult as the various forest blocks lie scattered and

having no other place to go to and the few scattered unreserves all being barren, the villagers have perforce to resort to the forests to meet their demands for fuel, thorns, green leaf manure and grazing.

74. *Forest offences.*—The following statement shows the number of cases reported every year and the compounding fees collected from 1966-67 to **1975-76:**

STATEMENT SHOWING NUMBER OF CASES REPORTED EVERY YEAR AND COMPOUNDING FEES COLLECTED FROM 1966–67 TO 1975–76.

Year.	*Grazing.*	*Felling.*	*Poaching.*	*Sandal-wood.*	*Miscella-neous.*	*Total*	*Compounding fees realised.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1966–67 ..	450	323	Nil.	Nil.	43	816	14,720·00
1 67–68 ..	335	252	Nil.	Nil.	42	629	19,764·50
1968–69 ..	264	294	Nil.	Nil.	76	637	19,157·80
1969–70 ..	286	233	Nil.	1	101	621	17,390·00
1970–71 ..	141	211	Nil.	1	170	523	9,629·00
1971–72 ..	341	340	Nil.	2	153	836	11,876·00
1972–73 ..	258	340	Nil.	4	180	682	16,863·00
1973–74 ..	190	172	Nil.	8	99	461	1,13,927·50
1974–75 ..	90	282	Nil.	9	30	411	56,909·00
1975–76 ..	202	250	Nil.	11	117	580	32,370·00

SECTION 3—FAUNA.

75. Wildlife other than water birds is scarce in the division but this is not surprising considering that the forest blocks are small, scattered admidst populous villages, their vegetation degraded and have no water sources during summer. In the previous plan it was stated that tigers and panthers, though comparatively rare, had receded to the relatively inaccessible reserved forests like Paranur and Vallam but to one acquiated with the present condition of these forests, these felines no longer exist in these forsts.

76. It was said in paragraph 66 of the previous plan that in order to augment wildlife M.A. Badshah, when he was the District Forest Officer, released a number of black bucks, spotted deer and pea fowl in the forests of Kelambakkam and Tiruporur Ranges, but now the position appears to be that only some deer and black buck are found in Thaiyur and Kolathur R.Fs., thanks to the co-operation of the local villagers. The non survival of the introduced species in the other Reserved Forests is mainly attributable to the facts that natural forests have been converted into plantations and lack of adequate supply of drinking water and fodder in summer.

77. Among the lesser fauna of the division mention may be made of the existence of mangoose, porcupine, and jackal.

78. *Bird life.*—The division is a paradise for the ornithologist, especially during the winter months when all tanks are full attracting many avian visitors. These tanks as well as the backwaters attract not only indegenous birds but also migratory birds from the cold countries of the northern latitudes.

79. *Vedanthangal Water Birds Sanctuary* — The Vedanthangal Water Birds' Sanctuary is not situated within forest limits but considering that the Forest Department has been closely associated with its development as a sanctuary it is but appropriate that a description of it should find a place in this plan.

80. The sanctuary is situated at a distance of about 70 km. along the Grand Southern Trunk road from Madras and then about 13 km. interior along the Uttiramerur-Valayaputhur Road. The sanctuary has been in existence for nearly two centuries; the oldest recorded evidence dating back to 1798. Mr. Place, the then Collector of Chingleput had issued a prohibiory order against shooting of birds in this sanctuary in 1798. Other places where mention has been made of the sanctuary is in "Nets and Eggs of Indian Birds" by Hume, Second Edition, Volume III, and "Bird Life in India" by Captain Bates. In 1936 the Collector of Chingleput officially recognised the place as a sanctuary and sanctioned the first governmental expense towards its upkeep. In recent years the Government have taken over the entire responsibility for the sanctuary. The tank has been declared a Reserved Land and under the Wild Birds and Animals Protection Act, 1912 the Government has prohibited the shooting of water birds within a radius of 32.19 km. (20 miles) of the sanctuary. An excellent road has been constructed right up to the sanctuary to enable visitors to reach it in comfort and a modern well furnished forest rest house with four suites and an attached canteen has been provided for the convenience of visitors to the place.

81. The sanctuary mainly consists of a 29.94 ha. rain-fed tank with a slightly off centre grover of Barringtona acutangula trees and a bund running almost from its northern most point to its southern most along its western limits. The bund supports shady semi-evergreen vegetation. A 7.32 m. (24 ft.) high observation tower equipped with a pair of high-powered binoculars and commanding a panoramic view of the sanctuary has been constructed along the bund.

82. This mixed heronry is said to be the most spectacular of its kind in the country because in no other heronry can so many thousands of birds of so many different species be found breeding in such closely-packed promiscuity. The species that nest regularly at this sanctuary are the following:—

Phalacrocorax niger—Little cormorant.

Phalacrocorax fusicollis—Shag.

Phalacrocorax carbosinensis—Large Cormorant.

Anhinga roufa—Darter or Snake-bird.

Egretta garzetta—Little egret.

Egretta intermedia—Median egret.

Egretta alba—Large egret.

Bubulcus ibis—Cattle egret.

Ardeola grayii—Pond Heron or Paddy-bird.

Nycticorax nycticorax—Night Heron.

Ardea cinerea—Grey Heron.

Anastomus oscitans—Openbilled stork.

Platalea leucorodia—Spoon bill.

Theleskironismelanocephalus—white Ibis.

Callinula chloropus—Indian Moorhen.

Podiceps ruficollis—Dabchink or Little Grebe.

83. Among the non-breeding indigenous birds to be found here are the Blackwinged stilt, (Himantopus himantopus) occasional Pelicans (Pelecanus philippensis) and Coots (Fulica atra). Other non-breeding birds to be found here in comparatively large numbers are the same species as the breeding birds. This is explained by the fact that not all breeding birds get into breeding condition at the same time; some do so later in the season, some earlier. For this reason many of the breeding species may be found here in non-breeding plumage, especially early in the season — this being especially true of the Egrets.

84. Among long distance migrants found at this sanctrary are the common Sandpiper (Tringa hypoicucos), Grey Wagtail (Motacilia capica) and Blue winged or Garganey Teal (Anos querquedula).

85. The vegetation along the bund shelters many song and brilliantly plumaged passerines such as Golden Oriole (Oriolus oriolus), Common Iora (Aegithina tiphia), Goldenbacked Wood Pecker (Dinopium benghalense), Weaver Birds (Ploccus species), Drongs (Dicrus species), Robins (Saxicoloidee fullcala, Bulbus (Pycononofus species), Mynhas (Aeridotheres tristis,) Blue Jays (Coracias benghalensis), Hoopoes (Upupa epops), whitebreasted Kingfisher (Halcyon smyrnensis), Pied Kingfisher (Ceryle rudis), Bluetailed Bee-eater (Merops philippinus), Pied Crested Cuckos (Clamator Jacobinus), Tree Pie (Dendrocitta vagabunda), Sun Birds (Cinnyris species) and Tailor Birds (Orthomus sutorius).

86. The commencement, extent and duration, and end of the nesting enterprise at the sanctuary are all very much dependent on rainfall. But normally November, December and January are the best months for a visit to the sanctuary. The evenings, with the sun behind one, is the best time of the day to view the birds. Moroever the big return flights are to be witnessed only in the evenings, shortly before sunset.

87. Though brief one cannot help referring in this account of the sanctuary to the foresight and sustained vigilance of the local villagers who were responsible for the development of this sanctuary through the ages. The villagers had realised, in a time when fertiliser was unknown, that the birds droppings enriched the tanks waters which were used by them for irrigation and so zealously protected the avian visitors even though they preyed on their valuable crops.

88. The grey Partridge (Francolinus pondicerianus) and the Jungle Bush Quail (Ferdicular asiatica) are the important game birds found in the forests of the division.

89. Deer Park, Guindy—The Deer Park, Guindy which is 2.41 sp. km. (595 acres) in extent and adjacent to Raj Bhavan is located in Guindy Park Reserved Forest within the limits of Madras city. The reserved forest which was in Tambaram Range was constituted into a separate unit with a superintendent in charge with effect from 20th October 1959 in G.O. Ms. No. 3291, Food and Agriculture, dated 17th September 1959. On the formation of the State Wildlife Organisation on 1st July 1960 this reserved forest was transferred to the control of the State Wildlife Officer.

90. What is unique of this deer park is that it is located in the midst of a densely populated metropolis, has good vegetation representative of the tropical dry evergreen forests characteristic of this part of the country and a high incidence of wildlife.

91. The main faunal attraction of this park is the occurrence of the Indian Antelope popularly known as the Black Buck found nowhere in the world except India. This species is afforded the strictest of protection in this park. The other animals found in the park and which enjoy equally strict protection are the Spotted Deer, White Buck, Bonnet Monkey, Small Indian Civet Cat, Jungle cat, Jackal, Common Mongoose and the Common Palm Civet Cat.

92. During September 1975, Thiru J. Mangalraj Johson, Assistant Conservator of Forests conducted a census of the Black Buck and Spotted Deer in this park adopting the directional count method. The result of the census was as follows :—

Species.	*Number counted.*			*Remarks.*
	10-9-1975 *A.N.*	11-9-1975 *F.N.*	11-9-1975 *A.N.*	
(1)	(2)	(3)	(4)	(5)
Black Buck	325	347	356	
Spotted Deer	1,450	1,554	1,587	

93. The incidence of bird life is also equally interesting. Many birds like the King Fisher, Blue Jay, Goldenbacked Woodpecker, Crow Pheosant, Wattled Lapwing, Red Wattled Lapwing, Bluefaced Malkoha, Shrikes, Koels, Doves, Munivcs, Munias Barkets, Parakeets, Grey Partridges, Tailor Birds, Robins, Drongos, Quails, Black Paradise Flycatcher and the stone Curlew are seen here.

94. The migratory birds that frequent this are the India Pitter, the North orange headed Ground thirst and the ever vibrant Grey wagboils.

95. The park with a net work of roads, foot paths, nature trails, lakes and ponds, all situated admist sylvan surroundings offer good opportunities for viewing wildlife. There is ample scope to improve this park, the amenities, roads, protection fence, etc., by declaring this as the National Park.

96. In June 1964 the Government declared, under the Wild Birds and Animals Protection Act, 1912 (Central Act VIII of 1912), the whole year to be a close time within a radius of 20 km. from this park in respect of Spotted Deer in G.O. Ms. No. 1989, Food and Agriculture, dated 30th June 1964 with a view to protecting such of these animals that strayed from the park.

97. An area of 8.90 ha. (22 acres) in the northern part of the park has been developed as a recreation centre for the Children the Children's park was inaugurated by Shri Jawaharlal Nehru, the late Prime Minister of the country on 14th April 1959. The park has a number of enclosures containing different kinds of animals and birds. A play-ground has been provided with merry-go-rounds, swings, parallel bars, sea-saws, slides, etc. Joy rides on elephants and ponies within park have been provided for, these is also a library containing books on wild life and nature study. An open air theater and facilities for camping are also available. A midget train for taking children around the park has been provided. Gardens with lawns, flower beds and ornamental trees have been laid out to make the park attractive.

98. *Madras Snake Park.*—In G.O. Ms. No. 3056, Agriculture Department, dated 19th November 1970 the Government sanctioned the lease of an acre of land in Guindy Park Reserved Forest to one Thiru Romulus Whitaker, a renowned herpetologist for a period of five years from 27th June 1971 on an anual rental of Rs. 120-00 for setting up a snake Park and Reptile Research Centre. The park was started on Gandhi's birthday in 1971. Its main purposes are to enthuse and educate the public in the filed of reptiles and to promote and carry out studies on this little known group of valuable animals. It is a private trust formed with financial help from the World Wildlife Fund, Switzerland. The park has about 400 reptiles of 30 different species.

99. The labourers in this park are Irulas, a hilltribe, for whom Thiru Whitaker is all praise and without whose help he says the park would have a hard time existing. The Irulas are natural snake catchers having learnt the art from their parents in early childhood. Many girls even learn the art of detecting, digging out and catching cobras, vipers, kraits and the harmless snakes. They also catch the rats and frogs needed to feed the snakes in the park. Many of the scientific studies made are based on original observations made by the Irulas.

100. Reptiles are the group of scaly cold-blooded animals including crocodiles, tortoises and turtles, lizards and snakes. At the snake park can be seen the common snakes of South India like :

Venomous.

(i) Cobra
(ii) Krait
(iii) Russell's viper
(iv) Pit Viper

Non-Venomous.

(i) Sand Boa
(ii) Rat Snake
(iii) Python
(iv) Vine snake
(v) Water snake
(vi) Brown Toce snake.

Also to be seen at the park are the Indian Marsh Crocodile, the Gharial from U.P. the American Alligator, Tortoises, Water Turtles, Monitor lizards and Chameleons. From other parts of the country and abroad are the Banded Krait (Bengal), Water Monitor lizards (Bengal) Royal snake (Rajasthan) and Puff Adder (Africa).

101. Venom is extracted at the park weekly from the Cobra, Krait, Russells Viper and Saw-scaled Viper. It is used in the manufacture of anti-venoum serum. After extraction it is dried and powdered in a vaccum desiccator and sold in this form to the Haffkine Institute, Bombay and those who want it.

102. A list of the divisions fauna is furnished in appendix VII.

CHAPTER III—UTILISATION OF THE PRODUCE.

Section 1—Agricultural Customs and wants of the Population.

103. *Agricultural customs.*—According to the 1971 census about 55.2. per cent of the total population of workers in the district are engaged in agriculture. In addition, cattle breeding, sheep and goat rearing and poultry keeping are also taken up by ryots. Thanks to the large number of tanks and wells paddy cultivation is fairly extensive. Varagu, Cholam and Dhal are some of the main dry crops raised. It may not be out of place here to mention that as a result of successive Five-Year Plans a rapid transformation has taken place in the life styles of the farming community. Mud and thatch houses are being replaced by structures of steel and cement. Water heaters, radios refrigerators and Television sets are no longer novelties. Children receive good education and there is a steady rise in the standard of living.

104. Among tree crops Casuarina is raised extensively because of the excellent market for it as fuel and scaffolding material in Madras city and the various towns in the district. Cocoanut, Palmyrah and Mango are among the other tree crops raised in private lands in the district.

105. Agriculturists in the district have become increasingly aware and receptive to modern methods of agriculture and have gradually been switching over to deep ploughing with tractors chemical manuring, use of improved seed and adoption of crop protection methods.

106. The main occuption of the people living along the coast is fishing and manufacture of salt.

107. Ceneral description of the population. The population of the district at the latest census which was carried out in 1971 was 2,907,599 (Males — 1,492,978 and females—1,414,621) the density working cut to 367 per square kilo metre as against the State average of 316 and national average of 182. The rural population is 1,896,909 scattered over 1,778 villages and the urban population 1,010,690 scattered over 74 towns. The decinnial (1961-71) population rate growth was 32.38 per cent.

108. The extent of forests i.e., Reserved Forests and Reserved Lands is 444.07 sp. km. and works out to 5.65 per cent of the total land area of the district as against the national average of 23.10 per cent and state average of 16.20 per cent.

109. The capital forest area works out to 0.02 hectare as against the state average of 0.05 and national average of 0.13.

110. The gross annual revenue per hectare of forest was **Rs. 42.68** during 1974-75.

111. *Hill tribes.*—There are no hill tribes in the division.

112. *Wants of the people.*—The chief forest requirements of the people are small timber for building and agricultural implements, fuel for domestic consumption and for cottage industries such as jaggery making, lime and brick kilns, .pottery, etc., pasture for cattle, thatch grass and to a lesser extent green leaf manure for wet cultivation. The fishermen along the coast require timber for catamarans and country craft. Granite, if it can be termed a forest product, is very much in demand in Madras City for construction work.

113. *Agricultural implements.*—The farmer's stock in trade of implements is small; a light wooden plough for use in puddled fields, and a slightly heavier one for use when the field ploughed is in a comparatively dry state for broadcast sowing, a wooden plank for use in levelling the surface in wet fields, a manvetti or spade for light hoeing and a clod-breaker for breaking up the ploughed up soil.

114. The plough consists of the handle, ploughshare, shaft and yoke. Of these the plough-share requires frequent renewal as it is most subject to wear. It has been ascertained from enquiry among the ryots that the ploughshare has to be renewed annualy for dry cultivation and biennially for wet cultivation. The remaining portions of the plough are only renewed triennially. The following table shows the species most prized for the various parts of a plough and other agricultural implements in the order of preference:—

Plough—

Share.—Tectona grandis and Acacia arabica.

Shaft.—Tectona grandis, Thespesia populnea, Cassia fistula Acacia Sundra and Morinda tinctoria.

Handle.—Lagerstroemia lanceolata, Thespesia populnea, Morinda tinctoria and Acacia arabica.

Yoke.—Thespesia populnea and Morinda Tinctoria. In addition, any other readily available species are used for the yoke and the handle.

115. *Bullock carts.*—The species used for the various parts are as follows :—

Wheel.—

Spokes.—Thespesia popunea and Albizzia lebbek.

Felloes—Inga dulce and Acacia arabica.

Hub or nave.—Albizzia lebbek.

Axle-tree or arbor.—Inga dulce, Mangifera indica and Ficus species.

Shaft or thill.—Albizzia lebbek.

Chassis.—Albizzia lebbek.

116. *Houses.*—Terraced and tiled houses are the general fashion in towns and large villages and Thatched houses in small villages. With steady improvement in the economic condition of the poorer classes under the Five-Year Plans thatch is rapidly giving place to tiles as a roofing material and this naturally means the construction of more substantial Buildings i.e., with brick and mortar.

117. While the affluent class of people use timber imported from outside the state, which in costly the common man uses timbers grown locally which cost about Rs. 350.10 to 529.65 per cubic metre in the round depending on size and quality. The species ordinarily used are furnished below :—

Doors and Windows—

Frame.—Azadirachta indica and Thespesia populnea.

Shutters.—Mangifera indica and Inga dulca.

Wall plates and ridge pieces.—Azadirachra ndica and Thespesia populnea.

Rafters.—Azadirachta indica.

Reepers.—Azadirchta indica, Ingadulce and Ficus species.

118. For hutting the species used are Bamboo, Palmyrah, Casuarina and Prosopis juliflora.

119. *Handlooms.*—The following species are used in manufacture of handlooms in the district :—

Slay, warp roller, cloth roller and back rest.—Lagerstrocmia lanceolata.

Race board.—Tectona grandit.

Tradlies and beams.—Terminatia Paniculata.

Leas rod.—Dendrocalamus strictus.

120. *Oil presses.*—The species used is Albizzia lebbek.

121. *Catamarans.*—The species used is Albizzia moluccana and the timber is obtained from Kerala and Kanyakumari.

122. *Timber.*—The forests of the division do not produce any timber. Hence, almost all the timber requirements are imported from the timber producing divisions of this state and from Kerala.

123. *Small timber.*—No small timber is produced in the forest of the division and all requirements are met from private lands.

124. *Bamboos.*—Bamboo which is required by the common man for a variety of purposes does not grow in the forests of the division and while one does come across a few clumps in private lands the bulk of the requirements are obtained from the forests of Salem Circle.

125. *Fuel.*—There were two fuel series known as Krishnareddykona and Nákkalakona functioning in Allikuli R.F. of Tiruvallur Range. The series were worked upto 1973-74 and were then wound up by the Chief Conservator of Forests for a period of ten years in his ref. No. 1885/74 K4, dated 16th January 1975 as reproduction did not keep pace with removals. The annual outturn from these series was anything between 30 to 437 tonnes, yields on the higher side being the result of smuggling both from this as well as the neighbouring state of Andhra Pradesh. The supply position of fuel to the public, largely from the numerous private Casuarina planta-

tions in the division, is comfortable and the closure of the above two fuel series has had very little if no adverse impact on it. The retail prices per tonne ruling in local markets for firewood of different species is as follows :

(1) *Species.*	(2) *Unsplit.*	(3) *Split.*
Cauuarina	220·00	240·00
Tamarind	200·00	220·00
Neem	180·00	200·00
Babul	180·00	200·00
Mango	140·00	160·00
Pungam	140·00	160·00
Prosopis	130·00	150·00
Miscellaneous	100·00	120·00

126. Extensive Eucalyptus tereticornis plantations were raised in the division for meeting the fuel needs of the public but their outturn has had to be diverted to the paper mill at Pallipalayam from 1972 because of a shortage in the supply of bamboo, the principal raw material of this mill, having depleted as a result of its flowering.

127. *Green manure leaves.*—Green manure leaves are utilised in paddy cultivation and the demand is seasonal. The demand occurs twice during the year, once during June-July and again in September-October when transplanting of paddy is done. The species commonly used for the purpose are Dodonea viscosa. Albizzia lebbek, Erythroxylon monogynum, Wrightia tinctoria, Azadirachta indica etc. The demand is met from unreserves wherever such unreserves capable of meeting the demand exist in the vicinity. The rest of the demand is met from forest areas and fr Tephrosia purpurea (Kolingi) raised in private fields during the dry season under the aegis of the Agriculture Department and Glyricidia maculata raised along the hedges and bunds of private fields. The sale of gree was permitted free from forest areas upto 1958 under the Grow More Food Campaign while in certain parts of Chinglepput Division it was allowed at a concessional rate of Re. 0.75 per cart load. This concession was withdrawn on 31st December 1958 and the normal rate of Re. 1.50 restored. In G.O. Ms. No. 3058, Food and Agriculture, dated 11th October 1963 the Government ordered that the rate of Rs. 2.00 per cart load Re. 0.10 per head load fixed in Government Memorandam No. 115157|D.II|60, Food and Agriculture, dated 21st December 1962 for the removal of green manure leaves from advance fuel coupes of Sathyamangalam and Thalamalai Ranges of Coimbatore North Division be extended to all the districts in the State for a period of two years from the date of order. The concession was extended biennially till in G.O. Ms. No. 2968, Agriculture, dated 11th November 1971 the Government enhanced the rates to Rs. 3.00 per cart load and Re. 0.15 per head load for a period of two years from the date of order. Now, pending renewal of this concession for a further period from 11th November 1973, removals are being permitted. Removals were permitted from advance fuel coupes and Cashew plantations. The quantity removed and revenue realised from 1966-67 to 1974-75 is furnished in the subjoined statement :

Year. (1)	*Quantity removed in cart loads.* (2)	*Revenue realised.* (3)	*Remarks.* (4)
1966–67	101	202·00	
1967–68	105	210·00	
1968–69	29	58·00	
1969–70	65	130·00	
1970–71	78	156·00	
1971–72	72	144·00	at Rs. 2·00 each.
	33	99·00	at Rs. 3·00 each.
1972–73	18	54·00	
1973–74	21	63·00	
1974–75	14	42·00	
1975–76	55	165·00	

128. There are a few forest based industries in the division located in the vicinity of Madras. None of them utilise the Eucalypt wood or Cashew raw nuts produced in the division. Their location in the division is because of its proximity to the port and metropolitan city of Madras. A list of these industries with details of their location, raw materials consumed, etc., are furnished in appendix VIII.

129. *Grazing.*—Cattle from towns and villages close to the forests resort to the forests for grazing daily and return to their habitation in the evenings. They are mostly scrub cattle maintained for their dung which is used as fuel and manure. Excessive and continuous grazing coupled with goat browsing on the slopes has resulted in erosion and depletion of species of high forage value. In almost all the forests the absence of adequate forage during the long critical dry periods has seriously limited their carrying capacity.

130. *Grazing incidence.*—The grazing incidence figures for the division for the years 1965-66 to 1974-75 are furnished in the subjoined statement .—

Grazing year.	*Area open to grazing in hectares.*	*Number of cow units licensed.*	*Grazing incidence as hectare per cow unit.*
(1)	(2)	(3)	(4)
1965–66	27,683·00	43,341	0·64
1966–67	29,004·00	43,735	0·66
1967–68	30,136·91	38,897·5	0·77
1968–69	30,202·99	34,287	0·88
1969–70	29,669·41	40,365	0·73
1970–71	29,669·57	38,707	0·77
1971–72	29,594·92	33,122	0·89
1972–73	29,942·99	33,726·5	0·89
1973–74	29,106·93	33,907·5	0·86
1974–75	29,170·77	32,500	0.90

The grazing incidence is high from the point of view of conservation and development of the forests of the division.

131. *Stall feeding.*—In G.O. Ms. No. 10, Agriculture, dated 3rd January 1955 the Government sanctioned the concession of free removal of monsoon grass from reserved forests by ryots and Co-operative Milk Supply Unions and Societies and the concession was renewed annually, until in G.O. Ms. No. 5887, Food and Agriculturist, dated 22nd December 1962, the Government fixed the rate of Re. 1.00 per cart load and Re. 0.05 per head load of the commodity with effect from 1st January 1963. The Government at the same time ordered in the same G.O. that grass from areas in reserved forests planted with other species may be allowed to be removed free with view to reducing the fire hazard in such plantations. In G.O. Ms. No. 2428, Agriculture Department, dated 2nd September 1971 the Government while sanctioning the continuance of the concession for a further period of one year from 1st April 1971 raised the rates to Rs. 2.00 per cart load and Rs. 0.10 per head load. There is no evidence of either the ryots of Co-operative Milk Supply Unions having availed of the concession.

132. *The grazing year.*—The grazing year has traditionally coincided with the fasli year which commences on the 1st July and no change in this arrangement is advocated. During the rainy season from October to December when agricultural fields are under standing crops, cattle resort to the forsts for grazing in larger numbers.

133. *Minor Forest Produce.*—The minor forest products of importance are only Cashew raw nuts from the numerous Cashew plantations, Palmyrah usufructs including leaves, and granite from the 139 stone quarries in the division. A certain amount of tatch grass is also removed from the Reserved Lands in Tiruvallur Range. Barring Cahew raw nuts which are collected departmentally other items of minor forest produce are exploited through contractual agency. Each Range is treated as a Minor Forest Produce unit and there are five such units in the division. The lease period is the fasli year from 1st July to 30th June. In the case of stone quarries each quarry is treated as a separate unit. The lease period for quarries was fixed as two years in G.O. Ms. No. 3299, Agriculture Department, dated 7th November 1968 and this was reiterated by the Government in their Memo. No. 24326|72|E2, dated 28th November 1972 although in between in 1971, the Government fixed the lease period for quarries in Tambaram and Pulikaradu R.F.'s at three years.

SECTION 2—MARKETS AND MARKETABLE PRODUCTS.

134. *Fuel.*—Fuel was being exploited from two fuel series in Tiruvallur Range and the outturn transported to Madras city for consumption. The series were worked up to 1973-74 and then wound up for the reason mentioned in paragraph 125.

135. *Cashew raw nuts.*—This is the most important produce of the division and the largest earner of revenue. Cashew usufructs were exploited through contractual agency, that is, the right to collect and remove the usufruts was sold to contractors but from 1968 unsold units were exploited departmentally. As departmental working was found more profitable a complete switch over to this mode of working was made in 1971.

136. The results of exploitation of Cashew raw nuts between 1958-59, when exploitation first started, and 1970-71, which was the final year of exploitation through contractual agency, is furnished in the sub-joined statement :—

Year.	*Yield obtained in Kg.*	*Revenue realised in rupees.*
(1)	(2)	(3)
1958–59	120	60·00
1959–60	472	256·00
1960–61	1,340	892·00
1961–62	1,846	2,156·00
1962–63	6,530	4,950·00
1963–64	17,630	18,300·00
1964–65	41,412	30,470·00
1965–66	70,265	65,519·00
1966–67	62,594	85,236·00
1967–68	22,778	75,027·00
1968–69	60,180	55,652·00
1969–70	62,263	98,235·00
1970–71	1,88,019	2,91,096·00

137. The results of collection through departmental agency is furnished in the sub-joined statement:—

Year.	Quantity collected in Kilograms.	Revenue realised in rupees.	Expenditure incurred in rupees.	Net profit in rupees.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)
1971 ..	2,26,656	3.83,996·00	26,381·95	3,57,614·05	
1972 ..	3,00,863	5,21,447·00	20,000·00	5,01,447·00	
1973 ..	2,55,508	6,95,718·00	29,211·50	6,66 506·50	
1974 ..	2,80,734·350	10,58,012·00	30,095·00	10,27.917·00	
1975 ..	1,12,945·60	3,38,836·80	24,509·05	3,14,327·75	Unpreceding drought.

138. The nuts are sold in public auction, the purchasers being from South Arcot district and Kerala State.

139. *Eucalypt wood.*—Up to 1970-71 demand for Eucalypt wood was poor as it could not stand competition with Casuarina as a fuel wood but as it was suitable for production of paper and there was a dearth of bamboo due to its flowering. Thiruvalargal Seshasayee Paper and Boards Limited Pallipalayam applied to the Government for allotment of coupes of this species to it for exploitation for the manufacture of paper. The Government conceded the request and from 1971-72 till to date all such coupes are exploited by the aforesaid paper mill. The results of mill working are furnished in the sub-joined statement:—

Lease period.	Royalty charged per tonne at site in rupees.	Targetted quantity of supply in tonnes.	Area clear-felled in hectares.	Quantity supplied in tonnes.	Revenue realised in rupees.
(1)	(2)	(3)	(4)	(5)	(6)
25-2-72 to 1-9-72.	22·50	1,700	174·30	817·005	18,382·65
1-7-73 to 23-12-73.	35·00	2,300	919·60	4,554·790	1,59,417·65
4-12-73 to 31-12-74.	40·00	10,000	1,736·40	3,451·620	1,38,064·80
9-9-74 to 31-3-75.	40·00	3,200	279·20	1,132·900	45,316·00

All the Eucalypt wood produced in the division is, therefore, now being utilised at Pallipalayam in Salem district for the manufacture of Paper and is thus supporting an important industry in the state.

SECTION 3—LINES OF EXPORT.

140. *General.*—The division is served by a good network of communications.

141. *Railways.*—The important railways routes of this division are—

(1) Madras Egmore to Villupuram along the main line-in metre-guage towards south.

(ii) Chingleput to beyond Kancheepuram along the metre-guage branch line.

(iii) Madras Central to Arkonam along the broad-guage towards the west.

(iv) Madras Central to Elayur along the broad-guage towards the south.

142. *Roads.*—The division has a very good net work of roads which render the various forest blocks easy of access. As a result, supervision of works and exploitation of the various plantations raised are comparatively much easier than in most other divisions in the State. The total length of the various types of roads (under the control of the Department of Highways and Rural Works) is 6,892.94 K.M. The break up for the same is as follows :—

State Highways	9.60 K.M.
Major District road	1,139.70 K.M.
Other District roads	1,291.74 K.M.
Panchayat Union roads	2,567.20 K.M.
Panchayat roads	1,884.50 K.M.

In addition, portions of the following National Highways traverse the division :—

(I) National Highways 45—Madras—Tiruchirappalli—Dindigul road from 0|0 Km. to 104|0 Km. (0|0 Km. to 11|6 Km. lies in Madras City.)

(II) National Highways 4—Madras—Chittoor—Bangalore road from 0|0 Km. to 86|2 Km. (0|0 Km. to 8|9 Km. lies in Madras City).

(III) National Highways 5—Madras-Calcutta G.N.T. road from 0|0 Km. to 52|8 Km. (0|0 Km. to 7|6 Km. lies in Madras City).

143. *Forest Roads.*—There is only one forest road that is from Allikuli to Ramancheri over a distance of 10.86 Km. It is a fair weather road and was being used for transport of firewood from the fuel series in Allikuli Reserved Forest.

144. *Canals.*—The Buckingham canal is an important and cheap waterway for water transport. This salt water navigation canal stretches from the backwaters of Marakanam to the deltaic canal waters of the Krishna river in Andhra Pradesh over a total length of 600 kilometres. The canal South of Madras is mainly used by boats of 0.61 m. to 1.83 m. drought with a maximum capacity of 10 tonnes.

SECTION 4—METHODS OF EXPLOITATION AND THEIR COSTS.

145. *Cashew raw nuts.*—Cashew raw nuts are exclusively being collected by the department since 1971. The period of collection is from the middle of March to the middle of June. For nuts collected from the tree no wages are paid but the mazdoors are allowed to appropriate the apples in lieu of payment. For nuts collected from the ground a rate of 0.50 per kilogram is paid.

146. The procedure followed in the departmental collection of raw nuts is as follows :—

Plantations to be exploited are divided into tasks, each task consisting of 500 trees. The tasks are demarcated with small white washed cairs. Each task is in charge of a taskman who does the actual collection of the produce. As already stated he is not paid any wages but is allowed to appropriate the apples for himself. He is, however, paid Re. 0.50 per kilogram of fallen seed. The work of ten taskmen is supervised by a Plot Mazdoor who is paid Rs. 120 per mensem. The nuts when collected are delivered at Collection Centres. They may be located in small temporary sheds or under a tree. Further, they may be located within the forest or in its proximity. The centres are comparable to forest depots and each is in charge of a Forester or Forest Guard. From the Collection Centres the days collection of nuts is transported to sub-godowns located at section headquarters or central points and which are in charge of separate Foresters who weigh and acknowledge the nuts in the Daily Collection Register maintained by the subordinates in charge of the Collection Centres. At the sub-godowns, which are ordinarily located in private rented buildings, the nuts are sun-dried for two days. They are then bagged, transported and delivered at Central Godowns which are in charge of separate Foresters. The Central Godowns in the division are located at Illaure, Hanumanthaputheri, Vandalur and Seethancheri, the last named being located in a private building, and serves as sale depot.

147. The forms in which the accounting registers at the different depots are maintained are furnished below.—

(i) COLLECTION DEPOT.

(a) *Register of daily collection.*

Name and year of Plantation—

			Date							
			1	2	3	4	5	6	7	8
Block number.	*Name of labourer.*	*Task number.*	*Quantity of nuts.*	*Quantity of nuts.*	*Quantity of nuts.*	*Quantity of nuts.*	*Quantity of nuts.*	*Quantity of nuts.*	*Quantity of nuts.*	*Quantity of nuts.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

(ii) SUB GODOWN.

(a) *Form 3—Register of receipts of raw nuts. (Printed on page 414 of the Forest Department Code).*

(b) *Invoice to cover transport of raw nuts.*

Name and designation of the sub-godown-keeper who sends the nuts.

Serial number :

Number of bags.	*Name of plantations from which nuts are collected.*	*Dates of collection of nuts.*	*Quantity of nuts sent to Central Godown.*	*Acknowledgement of the Central Godown-Keeper.*
(1)	(2)	(3)	(4)	(5)

Signature of Sub-godown-keeper.

Signature of Central godown-keeper.

(c) *Form 4 (Printed on page 418 of the Forest Department Code).*

(iii) CENTRAL GODOWN

a. Form 3—Register of receipts of raw nuts.

(Printed on page 414 of the Forest Department Code).

b. Form 4—Register of disposal of raw nuts.

(Printed on page 418 of the Forest Department Code).

148. The forms in which the various returns are submitted by the different depot-keepers and Range Officer are furnished hereunder :—

(i) COLLECTION DEPOT-KEEPER.

a. Daily collection report of Cashew raw nuts.

Name and designation of subordinate in-charge of collection work.	Date of collection.

Name and Year of plantation.	*Mazdoors.*		*Collection particulars.*	*Remarks.*
	Male.	*Female.*		
(1)	(2)	(3)	(4)	(5)

Signature of subordinate in-charge of collections.

This return is submitted daily to the District Forest Officer by post card with a copy to the Range Officer.

(ii) SUB-GODOWN-KEEPER.

a. Form 5—Receipts and issues of cashew raw nuts.

(Printed on page 422 of the Forest Department Code).

This is a monthly return based on forms 3 and 4 and submitted to the Range Officer.

(iii) CENTRAL GODOWN-KEEPER.

a. Form 5—Receipts and issues of cashew raw nuts.

(Printed on page 422 of the Forest Department Code).

This is a monthly return based on forms 3 and 4 and submitted to the Range Officer.

(iv) RANGE-OFFICER.

a. Weekly collection report of cashew raw nuts.

For the week ending :

Name of Range :	Division :

Serial number.	*Name and year of plantation and task number.*	*Extent of area.*	*Quantity of nuts collected during last week.*	*Quantity of nuts of ground collection.*
(1)	(2)	(3)	(4)	(5)

Collection of nuts during this week.		*Progressive total.*		*Item number of Form V.*	*Remarks*
Nuts collected from fruits.	*Ground collection.*	*Nuts collected from fruits.*	*Ground collection.*		
(6)	(7)	(8)	(9)	(10)	(11)

Signature of Range Officer.

This is a weekly return submitted to the Conservator of Forests and District Forest Officer.

b. Form 5—Receipts and issues of cashew raw units.

(Printed on page 422 of the Forest Department Code).

This is a monthly return submitted to the District Forest Officer.

149. *Granite.*—The piece-work rates paid by lessees of stone quarries for exploitation of granite are as follows :—

Collection of metal—

½" Rs. 64·00 to Rs. 80·00 per 100 c.ft.

¾" Rs. 40·00 per 100 c.ft.

1" Rs. 28·00 to Rs. 32·00 per 100 c.ft.

1½" Rs. 26·00 to Rs. 50·00 per 100 c.ft.

Roughstone for building—Rs. 35.00 per 100 stones.

Pillar stones 6' X 9" X 9"—Rs. 7.00 each.

Drilling, blasting and conversion into big boulder—

Re. 0.60 per ton.

150. *Eucalypt wood.*—As already mentioned Eucalypt wood is exploited by Thiruvalargal Seshasayee Paper and Boards Limited, Pallipalayam for the manufacture of paper. The rates paid by the Mills to the labourers and transporters for the work done by them in this connection are as follows :—

Felling conversion debarking and stocking 3m × 90 cm. × 90 cm. reckoned as 1·25 tonnes green.	Rs. 30·00	per stack.
Transport to road side for loading.	Rs. 3·00 to 4·00	per stack depending on length of lead.
Loading ten stocks each 3m. × 90 cm. × 90 cm. into a lorry for transport.	Rs. 20·00	per lorry.
Transport by lorry from coupe site to mill site ;		
Thiruvallur Range	Rs. 55·00	per tonne of weight as acknowledged at the mill.
Other Ranges	Rs. 45·00	per tonne of weight a acknowledged at the mill.

SECTION 5—PAST AND CURRENT PRICES.

151. The prices fetched for Eucalypt infillers of the Cashew Working Circle, the coupes of the Fuel and Eucalypt Working Circles and the various units of the Minor Forest Produce Working Circle such as Cashew usufructs, Stone quarries and Minor Forest Produce are furnished in the subjoined statements. Wherever possible the price fetched per hectare has been worked out and furnished.

STATEMENT SHOWING THE PRICES FETCHED FOR THE USUFRUCTS OF CASHEW PLANTATIONS UNDER THE MINOR FOREST PRODUCE WORKING CIRCLE.

Serial number.	Name and year of plantation.		Area in hectares.	1966–67		1967-68		1968-69		1969-70	
				Total revenue realised in rupees.	*Revenue realised per hectare in rupees.*	*Total revenue realised in rupees.*	*Revenue realised per hectare in rupees.*	*Total revenue realised in rupees.*	*Revenue realised per hectare in rupees.*	*Total revenue realised in rupees.*	*Revenue realised per hectare in rupees.*
(1)	(2)		(3)	(4)		(5)		(6)		(7)	
				1. TIRUVALLUR RANGE.							
1	1945	Allikuli	1·21	Not sold.		39·04	32·36	25·08	20·73	..	..
	1953	Pullarampakkam	52·61	156·00	2·97	170·00	3·23	175·00	3·33	205·00	3·90
3	1956	Mailapore	209·22	3,500·00	16·73	3,950·00	18·18	2,929·32	14·05	..	..
4	1956	Irugulam	202·34	2,917·00	14·42	3,400·00	16·80	5,000·00	15·88	Departmental Collection. Revenue figure not available.	
5	1960	Irugulam	112·50	53·00	0·47	13·20	0·12				
6	1957	Palavakkam	212·87	2,150·00	3·58	2,800·00	4·66	5,000·00	8·31		
7	1958	Manali	170·78								
8	1959	Manali	217·72								
9	1960	Manali	69·20	Not sold.		130·00	1·88	76·56	1·11		
10	1960	Erumaivettipalayam	142·85	Not sold.		80·00	0·56	140·00	0·98		
11	1959	Pulikundram	23·00	Not sold.		Not sold.		Not sold.		Not sold.	

STATEMENT SHOWING THE PRICES FETCHED FOR THE USUFRUCTS OF CASHEW PLANTATIONS UNDER THE MINOR FOREST PRODUCE WORKING CIRCLE—*cont.*

Serial number.	*Name and year of plantation.*		*Area in hectares.*	1970-71		1971-72		1972-73		1973-74		1974-75	
				Total revenue reali-sed in rupees.	*Revenue reali-sed per hectare in rupees.*	*Total revenue reali-sed in rupees.*	*Revenue reali-sed per hectare in rupees.*	*Total revenue reali-sed in rupees.*	*Revenue reali-sed per hectare in rupees.*	*Total revenue reali-sed in rupees.*	*Revenue reali-sed per hectare in rupees.*	*Total revenue reali-sed in rupees.*	*Revenue reali-sed per hectare in rupees.*
(1)	(2)		(3)	(8)		(9)		10)		(11)		(12)	
				1. TIRUVALLUR RANGE—cont.									
1	1945	Allikuli	1·21			60,363·00	42·68	89,061.67	62·97	1,03,267·35	73·02	1,51,939·41	100·43
2	1953	Pullarampakkam	52·61	260·00	4·94								
3	1956	Mailapore	209·22										
	1956	Irugulam	202·34	5,620·00	27·78								
5	1960	Irugulam	112·50										
	1957	Palavakkam	212·87	32,836·78	28·90								
7	1958	Manali	170·78										
8	1959	Manali	217·72										
	1960	Manali	69·20										
1	1960	Erumaivettipalayam	142·85										
	1959	Pulikundram	23·00	Not sold									

STATEMENT SHOWING THE PRICES FETCHED FOR THE USUFRUCTS OF CASHEW PLANTATIONS UNDER THE MINOR FOREST PRODUCE WORKING CIRCLE—*cont.*

Serial number.	Name and year of plantation.		Area in hectares.	1966–67		1967–68		1968–69		1969–70	
				Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revenue realised per hectare in rupees.
(1)	(2)		(3)	(4)		(5)		(6)		(7)	
				2. TAMBARAM RANGE.							
1	1947	Vandalur	0·40	4,600·00	11,500.00	8,150·00	34·72	21·10	52·75	21,374·95	
2	1956	Vandalur	234·31	15,087·30	64·39			3,375·25	14·40		
3	1957	Vandalur	209·63	4,600·00	21·94	3,060·00 (including 1947 Vandalur).	14·60	2,668·38	12·72		
4	1958	Vandalur	189·39	4,500·00	23·76	3,050·00		1,504.80	7·95		
5	1959	Vandalur	84·94	1,350·00	15·89			958·32	11.28		
6	1956	Vadakkupattu	207·19	850·00	4·10	740·00	3·57	704·90	3·40		
7	1956	Gudalur	267·09	4,750·00	6·98	6,125·00	12·83	2,834·70	10·61		
8	1957	Gudalur	210·44					1,760·25	8·36		
9	1958	Gudalur	203·15			3,470·00	17·08	4,624·45	22·76		
10	1959	Unamanjeri	129·09	350·00	1·40	200·00	1·55	211·05	1·63		
11	1959	Nallur	52·61	360.00	1.44	102.96	0·41	12.50	0·06		
12	1960	Nalur	197·08								
13	1959	Maganiam	211·65	70·00	0.33	59.40	0.21	70·60	0·33		
14	1960	Maganiam	65·96	No yield.				41.55	0·63		
15	1960	Kumili	178.47	500.00	2·80	610·00	3.42	211.20	1·18		
16	1954	Mannu	90·65	70·00	0·77	33.00	0·36	Nil	..		

STATEMENT SHOWING THE PRICES FETCHED FOR THE USUFRUCTS OF CASHEW PLANTATIONS UNDER THE MINOR FOREST PRODUCE WORKING CIRCLE—*cont.*

Serial number.	*Name and year of plantation.*		*Area in hectares.*	1970–71.		1971–72.		1972–73.		1973–74.		1974–75.	
				Total revenue realised in rupees.	*Revenue realised per hectare in rupees.*	*Total revenue realised in rupees.*	*Revenue realised per hectare in rupees.*	*Total revenue realised in rupees.*	*Revenue realised per hectare in rupees.*	*Total revenue realised in rupees.*	*Revenue realised per hectare in rupees.*	*Total revenue realised in rupees.*	*Revenue realised per hectare in rupees.*
(1)	(2)		(3)	(8)		(9)		(10)		(11)		(12)	
1	1947	Vandalur	0·40										
2	1956	Vandalur	234·31										
3	1957	Vandalur	209·63										
4	1958	Vandalur	189·39										
5	1959	Vandalur	84·94										
6	1956	Vadakkupattu	207·19										
7	1956	Gudalur	267·09										
8	1957	Gudalur	210·44										
9	1958	Gudalur	203·15	96,522·06	38·12	1,16,092·00	45·85	1,37,407·24	54·27	1,87,666·90	74·02	1,98,262·50	78·08
10	1959	Unamanjeri	129·09										
11	1959	Nallur	52·41										
12	1960	Nallur	197·08										
13	1959	Maganiam	211·65										
14	1960	Maganiam	65·96										
15	1960	Kumili	178·47										
16	1954	Mannur	90·65										

Serial number.	Name and year o plantation.	Area in hectares.	1966–67		1967–68		1968–69		1969– 70	
			Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revenue realised per hectare in rupe es.
(1)	(2)	(3)	(4)		(5)		(6)		(7)	
	3. KELAMBAKKAM RANGE.									
1	1956 Tirutheri	186·96	4,050·00	15·21	1,875·00	7·04	1070·76	5·73	12,781·45	5.19
	1957 Tirutheri	79·32					1,094·28	13·80		
3	1956 Mambakkam	218·53	2,850·00	4·63	2'170·00	3·53	1,214·40	5·56		
4	1957 Mambakkam	174·26					739·20	4·24		
5	1958 Mambakkam	222·58					335·28	1·51		
6	1956 Thaiyur	230·67	320·00	1·10	252·00	0.86	725.00	3·14		
7	1957 Thaiyur	60·70					500·00	8·24		
8	1957 Sengundram	152·16	370·00	2·43	950·00	2·51	506·88	3·33		
9	1958 Sengundram	226·62	370·00	1·63			1,203·84	5·31		
10	1959 Sonalur	214·08	Not sold		7·00	0·02	32.80	0·15		
11	1960 Sonalur	150·14	Not sold				9·24	0·06		
12	1959 Anjur	184·94	743·00	4·02	600·00	3·24	930·00	5·03		
13	1959 Kayar	131'12	Not sold		265·00	1·56	12·03	0·09		
14	1960 Kayar	33·85	Not sold				Nil	..		
15	1959 Sirukundram	57·46	310·00	1·61	300·00	1·56	558·00	9·71		
16	1960 Sirukundram (Bit I & II)	134·76					149·72	1·11		

Serial number.		Name and year of plantation.	Area in hectares.	1970–71		1971–72		1972–73		1973–74		1974–75	
				Total revenue realised in rupees.	*Revenue realised per hectare in rupees.*	*Total revenue realised in rupees.*	*Revenue realised per hectare in rupees.*	*Total revenue realised in rupees.*	*Revenue realised per hectare in rupees.*	*Total revenue realised in rupees.*	*Revenue realised per hectare in rupees.*	*Total revenue realised in rupees.*	*Re realised per hectare in rupees.*
(1)		(2)	(3)	(8)		(9)		(10)		(11)		(12)	
				3. KELAMBAKKAM RANGE—*cont.*									
1	1956	Tirutheri	186·96										
2	1957	Tirutheri	79·32										
3	1956	Mambakkam	218·53										
4	1957	Mambakkam	174·26										
5	1958	Mambakkam	222·58										
6	1956	Thaiyur	230·67										
7	1957	Thaiyur	60·70	41,651·48	18·28	49,750·00	20·20	1,23,360·00	50·08	1,71,657·10	69·69	3,11,799·67	126·59
8	1957	Sengundram	152·16										
9	1958	Sengundram	226·62										
10	1959	Sonalur	214·08										
11	1960	Sonalur	150·14	1,150·00	6·22								
12	1959	Anjur	184·94										
13	1959	Kayar	131·12										
14	1960	Kayar	38·85										
15	1959	Sirukundram	57·46										
16	1960	Sriukund (Bit I & II)	134·76										

Serial number	Name and year of plantation		Area in hectares.	1966–67		1967–68		1968–69		1969–70	
				Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees	Revenue realised per hectare in rupees.
(1)	(2)		(3)	(4)		(5)		(6)		(7)	
4. CHINGLEPUT RANGE.											
1	1957	Kattankolathur	13·76 217·31	380·00	1·64	380·00	1·64	575·00	2·49		
2	1958	Kattankolathur									
3	1961	Kattankolathur	18·11	Not sold		Not sold		Not sold			
4	1957	Siruvanjur	203·96	630·00	3·09	500·00	2·45	1,030·00	5·05	1'350·00	6·62
5	1959	Salur	195·46	930·00	4·76	50·00	2·56	1,025·00	5·24		
6	1959	Edamachi	90·74	39·00	0·39	Departmental Collection Revenue figure not available.		Departmental Collection Revenue figure not available.		20,781·00	19·58
7	1960	Appur Bit I and II	87·41	52·00	0·59	40·00	0·46	14·52	0·17		
8	1960	Kavanipakkam	69·20	Not sold		Not sold		Departmental Collection Revenue Figure not available.			
9	1957	Tirukkalikundram	161·47 208·81	4,450·00	12·04	3,115·00					
10	1958	Tirukkalikundram									

Serial number	Name and year of plantation.	Area in hectares.	1970–71		1971–72		1972–73		1973–74		1974–75	
			Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revenua realised per hectare in rupees.
(1)	(2)	(3)	(8)		(9)		(10)		(11)		(12)	
	4. CHINGLEPUT RANGE—*cont.*											
1	1957 Kattankolathur	13·76	31,095·24	24·57	42,406·00	33·51	53,355·02	42·16	85,493·90	67·56	156,439·99	123·63
2	1958 Kattankolathur	217·31										
3	1961 Kattankolathur	10·11										
4	1957 Siruvanjur	203·96										
5	1959 Salur	195·46										
6	1959 Edamachi	98·74										
7	1960 Appur Bit I and II	87·41										
8	1960 Kavanipakkam	69·20										
9	1957 Tirukkalikundram	161·47										
10	1958 Tirukkalikundram	208·01										

Serial number.		Name and year of plantation.	Area in hectares.	1966–67		1967–68		1968–69		1969–70	
				Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revanu realised in rupees.
1	1956	Illalur.	212.46								
2	1957	Illalur and Madyathur	211·65			3,300·00	7·78				
3	1958	Madayathur	205 ·18		15·97						
4	1959	Madayarhur and Alathur	208·41			800 ·00	1·93	..	..	..	..
5	1960	Alathur and Oragadam	214·50	100·00	0·47	No demand.		not available.			
6	1956	Kattur	219·74	3,35 ·00	15·62	1,645·00	3·86	..	..	..	..
7	1957	Kattur	205·98	1,110·00	5·39	..	..	..	..	..	..
8	1958	Kattur	194·65	640·00	3·29	385·00	1·98	..	..	..	..
9	1959	Kattur	195·87	1,150·00	5·87	665·00	3·40	..	..	..	..
10	1956	Maiyur	36·02	Not available.							
11	1958	Maiyur	10·12	Do.	..	1,200·00	21·33	2,825·00	80·21	4,600·00	81.76
12	1959	Maiyur	10·12	Do.	..	..	..	..	..	..	..
13	1959	Valluvapakkam	103·60	Do.		Not sold.		Department Collection. Revenue figure not available.		Department Collection Revenue figure not available.	
14	1969	Thandalam	20·20	..	..	..	..	..	..	..	..
15	1969	Illalur	20·20	..	..	..	..	..	..	..	..

Serial number.	Name and year of plantation.		1970–71		1971–72		1972–73		1973–74		1974–75	
			Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revenue realised per hectare rupees.	Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revenue realised per hectare in rupees.	Total revenue realised in rupees.	Revenue realised per hectare in rupees.
			(8)		(9)		(10)		(11)		(12)	
1	1956	Illalur	..	..	..	..	..	..	..	..	..	..
2	1957	Illalur and Madyathur	..	..	..	..	..	..	..	..	..	..
3	1958	Madayathur	..	..	..	..	..	..	..	..	..	..
	1959	Madayathur and Alathur	..	..	..	..	..	..	..	..	..	..
5	1960	Alathur and Oragadam	10,03,505·00	51·03	1,09,534·00	1,65,365·17	..	..	1,94,076·15	..	3,52,392·85	..
6	1956	Kattur	..	..	..	..	..	..	..	..	..	..
7	1957	Kattur	..	..	..	..	..	..	..		..	..
8	1958	Kattur	..	..	..	..	..	..			..	..
9	1959	Kattur	..	..	..	..	..	..			..	..
10	1956	Maiyur	..	..	..	..	..	..			..	..
11	195	Maiyur	..	..	..	..	..	..			..	..
12	1959	Maiyur	..	..	..	..	..	..			..	..
13	1959	Valluvapakkam	..	..	..	..	..	..			..	
14	1969	Thandalam	..	..	..	..	..	..				
5	1969	Illau	..	..	..	..	..	..				

STATEMENT SHOW NG THE PRICES FETCHED PER KILOGRAM OF DEPARTMENTALLY COLLECTED CASHEW RAW NUTS IN DIFFERENT MONTHS DURING DEPARTMENTAL AUCTIONS

Serial number and months.	1971–72		1972–73		1973–74		1974–75		1975–76	
	Quantity sold in kilograms.	*Price fetched. per kilograms.*	*Quantity sold in kilograms.*	*Price fetched in kilograms.*	*Quantity sold in kilograms.*	*Price fetched per kilograms.*	*Quantity sold in kilograms.*	*Price fetched per kilograms.*	*Quantity sold in kilogrms.*	*Price fetched per kilograms.*
(1)	(2) KGS.	(3) RS.	(4) KGS.	(5) RS.	(6) KGS.	(7) RS.	(8) KGS.	(9) RS.	(10) KGS.	(11) KGS.
1 January	..	..	..	..	..	..	..	..	..	..
2 February	..	..	..	..	..	..	..	..	..	..
3 March	..	..	3,352	2·26		..	..	..	..	..
4 April	..	..	..	..	..	..	..	..	..	..
5 May	..	..	..	..	1,14,000	3·39	1,50,000	4·25	..	..
					99,000	2·95	1,00,000	4·28	..	..
6 June	1,94,000	1·83	..	..	..	..	..	..	..	..
7 July	..	..	..	..	..	..	..	..	..	..
8 August	..	..	..	..	..	..	..	..	1,12,945·60	3·00
9 September	..	..	55,000	1·90	21,000	2·99	..	..	..	..
10 October	..	..	40,000	1·90	..	..	..	..	..	..
	..	..	1,35,000	1·97	..	..	..	..	..	..
	..	..	35,000	2·00		..	..	..	..	..
11 November	3,000	1·96	..	..	..	..	..	..	..	..
	2,800	1·89	..	..	..	..	..	..	..	..
12 December	..	..	..	..	..	..	..	..	..	..
Average price fetched per kilogram during the year.	..	1·83	..	1·91	..	3.19	..	4·26	..	

STATEMENT SHOWING THE PRICES FETCHED BY THE SALE OF EDUCALYPT INTERPLANTED IN CASHEW PLANTATIONS OF THE CASHEW WORKING CIRCLES.

Serial number.	*Year of clear felling.*	*Name and year of Cashew Plantation.*	*Year of inter planting.*	*Aear of cashew planta-tion in hectare.*	*Total revenue realised.*	*Revenue realised per hectare.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		1. *Tiruvallur Range.*			RS.		
1	1973–74	1956 Mailapore	1963	209·22	451·60	2·16	....
2	Do.	1956 Mailapore	1964	209·22	..		Not worked.
3	Do.	1960 Manali	1962	69·20	312·40	4·51	..
4	Do.	1956 Irugulam	1963	202·34	2,450·40	12·11	..
		2. *Tambaram Range*					
1	1973–74	1959 Nallur	1962	52·61	2,460·00	46·76	..
2	Do.	1960 Nallur	1962	197·08	3,015·00	15·30	..
3	Do.	1957 Vandalur	1964	209·63	2,500·00	11·93	..
4	Do.	1956 Gudalur	1963	267·09	4,079·60	15·27	..
5	Do.	1956 Vadakkupattu	1963	207·19	5,300·80	25 58	
		3. *Kelambakkam Range.*					
1	1973–74	1959 Anjur	1962	184·94	3,550·00	19·20	..
2	Do.	1956 Tirutheri	1962	178·87	12,954·90	72·43	..
3	Do.	1956 Tirutheri	1963				
4	Do.	1959 Anjur	1963	184·94	80·00	0·43	.
5	Do.	1956 Thaiyur	1963	230·67	7,983·60	34·61	..
6	Do.	1956 Mambakkam	1963	101·17	9,967·20	98·52	..
7	Do.	1956 Mambakkam	1964	117·36	13,541·20	115·38	..

Serial number. (1)	Year of clear planting. (2)	Name and year of Cashew Plantation. (3)	Year of inter planting. (4)	Area of cashew plantation in hectare. (5)	Total revenue realised (6) RS.	Revenue realised per hectare. (7)	Remarks. (8)
			4. *Chingleput Range.*				
1	1973–74	1953 Salur 3..	1962	195·46	30,575·65	156·43	..
2	Do.	1960 Appur	1962	87·41	7,218·80	82·59	..
3	Do.	1957 Siruvanjur	1961	203·96	20·00	0·10	..
4	Do.	1957 Tirukkalikunram	1965	161·47	368·40	2·28	..
5	Do.	1959 Salur	1963	195·46	18,674·25	95·54	..
			5. *Madurantakam Range.*				
1	1973–74	1956 Ilallur	1963 1964	212·46	36,139·65	170·10	
2	Do.	1956 Illalur					
3	Do.	1957 Illalur	1961	211·65	1,773·45	[illegible]	
4	Do.	1956 Kattur	1963	219, 74			
5	Dc.	1357 Kattur	1961	205·99	9,261·2[illegible]	[illegible]	
6	Do.	1958 Kattur	1961	194·65			
7	Do.	1959 Kattur	1962	195·87	50,[illegible]·80		

STATEMENT SHOWING THE PRICES FETCHED FOR THE COUPES OF THE FUEL WORKING CIRCLE

Serial Number	Year of Felling	Name of Range.	Serial number of coupes. worked.	Total area worked in hectares.	Total revenue realised.	Revenue realised per hectares.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
					RS.		
			KRISHNA REDDY KOYAN SERIES.				
1	1966–77	Tiruvallur.	VIII	..	..	..	Sale dropped.
2	1967–68	Do.	IX	17·00	1,344·00	79·06	....
3	1968–69	Do.	X	16·43	1,166·53	71·00	
4	1969–70	Do.	VI	15·78	946·92	60·00	Arrear coupe.
5	1970–71	Do.	XII	19·23	576·90	30·00	
6	1970–71	Do.	XI	15·80	474·00	30·00	Arrear coupes.
7	1971-72	Do.	XIII	11·13	1,836·45	165·00	....
8	1972–73	Do.	XIV	20·30	1,076·00	53·00	....
9	1973-74	Do.	XV	17·40	382·80	22·00	....
9	1974–75	Do.	XVI	....	....	....	....
			(ii) *Nakkalakona Series.*				
1	1966–67	Tiruvallur	XXV	..	..	..	Sale dropped.
2	1967–68	Do.	XXIV	6·48	560·00	86·42	....
3	1968–69	Do.	XXVII	6·77	609·30	9 ·00	....
4	1970–71	Do.	XXIX	7·85	196·25	25·00	Arrear coupes.
5	1970–71	Do.	XXVIII	5·10	464·10	90·00	Arrear coupe. Not worked.
6	1971–72	Do.	XXX	8·60	2,193·00	255·00	....
7	1972–73	Do.	I	6·70	476·00	71·04	....
8	1972–73	Do.	XXVIII	5·10	1,397·40	274·00	....
9	1973–74	Do.	II	8·10	17·820	22·00	....
10	1974–75	Do.	III	..	..	..	Sale dropped.

Note.—The working Circle was wound up for a period of ten years in Chief Conservation of Forests Reference No. 1885/75 K-4, ted 10th January 1975.

STATEMENT SHOWING THE PRICES FETCHED FOR THE COUPES OF THE EUCALYPT —WORKING CIRCLE.

Serial number.	Year of clear felling.	Name and year of plantation.	Area in hectares.		Total revenue realised.	Revenue realised per hectare.	Remarks.
			As per permanent register of plantation.	As per Control Book.			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
					RS.		
			1. *Tiruvallur Range.*				
1	1971–72	Panchali, 1961	8·09	9·50	266·00	28·00	....
2	1973–74	Panchali (Bits I and II), 1962	89·03	88·80	3,398·00	38·27	....
3	1973–74	Peddapullar, 1962	8·09	8·10	500·80	61·83	....
4	1973–73	Panchali, 1963	30.76	30·80	654·40	21·25	....
5	1973–74	Peddapullur 1963	82·90	101·20	3,770·00	37·25	....
6	1973–74	Peddapullur, 1964	63·13	63·13	9,872·00	156·38	....
7	1973–74	Erumaivettipalayam, 1964	4·05	4·04	1,306·00	323·27	....
8	1973–74	Palavakkam, 1963	31·57	21·60	9,064·00	419·63	....
9	1973–74	Palavakkam, 1965	30·35	30·40	330·00	10·86	....
10	1973–74	Palavakkam 1964,	41·28	41·28	4,016·00	97·29	....
11	1973–74	Nemalur, 1965	22·26	22·30	1,631·00	73·14	....
12	1973–74	Mailapore, 1965	20·63	20·63	4,437·00	216·53	....
13	1973–74	Mailapore, 1966	29·95	30·00	5,021·00	167·37	....
14	1973–74	Nemalur, 1966	22·26	22·30	534·00	23·95	....
15	1973–74	Siruvada, 1966	20·64	20·60	256·00	12·43	....
16	1973–74	Palavakkam, 1966	21·45	21·50	449·00	20·88	....
17	1973–74	Allikuli, 1965	20·64	20·60	65·00	3·16	....
18	1973–74	Siruvada, 1965	29·54	29·50	610·00	20·68	....

2. *Tambaram Range.*

1	1968–69	Gudalur, 1957	4·05	3·95	1,224·50	310·00	....
2	1971–72	Vandalur, 1959	8·90	8·90	2,492·00	280·00	....
3	1971–72	Mannur, 1957	4·05	1·40	67·50	16·46	....
4	1971–72	Mannur, 1958	4·05	4·10	67·50	16·46	....
5	1971–72	Mannur, 1959	8·09	8·10	90·00	11·11	....
6	1971–72	Mannur, 1960	8·90	9·40	112·50	11·97	....
7	1971–72	Gudalur, 1959	4·05	4·10	225·00	54·88	....
8	1971–72	Gudalur, 1960	4·05	4·40	472·50	107·39	....
9	1971–72	Gudalur, 1961	4·05	7·30	607·50	83·22	....
10	1971–72	Mannur, 1961	8·09	7·80	90·00	11·54	....
11	1971–72	Nanmangalam, 1961	8·09	7·90	967·50	122·47	....
12	1973–74	Gudalur, 1962	6·47	6·50	367·20	56·49	....
13	1973–74	Mannur, 1962	8·09	8·10	40·00	4·94	....
14	1973–74	Nanmangalam (Bits I and II), 1962	49·78	49·80	4,304·40	86·43	....
15	1973–74	Gudalur, 1963	4·05	4·00	743·20	183·51	....
16	1973–74	Maganiyam, 1963	23·47	23·50	4,789·60	203·81	....
17	1973–74	Vattambakam, 1963	29·54	29·50	6,159·40	208·69	....
18	1974–75	Nanmangalam, 1964	8·90	8·90	2,655·00	298·31	....
19	1974–75	Madurapakkam, 1964	21·04	21·04	11,501·00	546·63	....
20	1974–75	Vandalur, 1965	21·04	21·04	13,364·00	636·38	....
21	1974–75	Nanmangalam, 1965	21·04	21·00	904·00	43·05	....
22	1974–75	Vattambakkam, 1965	23·38	19·40	7,242·00	373·30	....
23	1974–75	Vadakkupattu, 1965	29·95	29·95	3,164·00	105·64	....
24	1974–75	Vattambakkam, 1966	40·47	40·50	2,450·00	67·17	....
25	1974–75	Vandalur, 1966	19·83	19·20	1,315·00	68·49	....
26	1974–75	Madurapakkam, 1966	40·47	40·50	2,450·00	60·49	....
27	1974–75	Vadakkupattu, 1966	19·02	19·00	1,139·00	59·95	....

STATEMENT SHOWING THE PRICES FETCHED FOR THE COUPES OF THE EUCALYT WORKING CIRCLE

Serial number.	*Year of clear felling.*	*Name of and year of plantation.*	*Area in hectares.*		*Total revenue realised.*	*Revenue realised per hectare.*	*Remarks.*
			As per permanent Register of plantations.	*As per Control Book.*			
(1)	(2)	(3)	(4)		(5)	(6)	
		3. ***Kelambakkam Range.***					
1	1971–72	Mambakkam, 1960	4·00	4·50	385·60	96·40	....
2	1973–74	Tirutheri, 1962	8·09	8·10	1,175·00	145·06	....
3	1973–74	Sirukundram, 1963	8.09	8·10	182·10	22·57	....
4	1973–74	Tirutheri, 1963	28·32	23·90	750·00	31·38	4·82 ha. were handed over to the Public Works Department.
5	1973–74	Thaiyur, 1963	60·70	60·70	2,411·60	39·73	....
6	1974–75	Mambakkam, 1964	19·83	15·30	650·00	42·48	....
7	1974–75	Tirutheri, 1964	10·93	8·90	1,250·00	140·45	
8	1974–75	Vallam (Bits I and II), 1964	23·26	22·23	125·00	6·62	
9	1974–75	Senkundram, 1965	19·83	20·20	787·00	38·96	
10	1974–75	Mambakkam, 1965	20·23	20·20	1,418·00	70·20	
11	1974–75	Thaiyur, 1965	20·23	20·20	1,014·00	50·20	
12	1974–75	Mambakkam, 1966	19·83	19·80	1,884·00	95·15	...
13	1974–75	Senkundram, 1966	23·07	23·10	450·00	19·48	....
14	1974–75	Kolathur, 1966	20·23	20·20	440·00	21·78	....
		4. *Chenglepat Range.*					
1	1968–69	Paranur, 1958	6·07	5·79	1,911·00	330·05	....
2	1971–72	Paranur, 1959	7·69	6·92	1,170·40	169·13	0·77 hactare was handed over to the Department of Highways and Rural Works in 1976.

3	1971–72	Tirukkalikundram, 1960	8·09	7·50	2,835·00	378·00	....
4	1971–72	Tirukkalikundram, 1961	8·09	8·30	1,380·60	166·34	..
5	1972–73	Tirukkalikundram, 1961	8·498	8·10	1,534·50	189·44	..
6	1972–73	Tirukkalikundram, 1963	8·498	8·40	1,306·00	155·43	....
7	1972–73	Kathankolathur, 1963	18·62	8·00	3,856·00	482·00	....
8	1973–74	Hanumanthaputheri, 1962	2·02	2·00	1,100·00	550·00	....
9	1973–74	Hanumantaputheri, 1963	4·05	4·10	2,300·00	560·98	....
10	1974–75	Hanumanihaputheri, 1964	2·22	2·02	1,520·00	752·48	....
11	1974–75	Kattankolathur, 1964	19.02	8·10	1,664·00	205·43	....
12	1974–75	Kattankolathur, 1964	19·02	9·10	664·00	05·43	....
13	1974–75	Tirukkalikundram, 1964	20·23	16·62	3,666·00	220·58	....
14	1974 -75	Kavanippakkam, 1965	22·66	22·70	4,157·00	183·13	....
15	1974–75	Kattankolathur, 1965	4·05	4·10	476·00	116·10	....
16	1974–75	Tirukkalikundram (Bits I and II)	28·73	28·73	7,600·00	264·53	....
17	1974–74	Appur (Bits I and II), 1966	39·65	39·10	8,763·00	224·12	....
18	1974–75	Salur, 1966	30·35	30.41	16,320·00	536·84	....
			5· *Maduranthakam Range*.				
1	1970–71	Thottacheri (Part), 1962	40·47	8·62	1,422·30	165·00	....
2	1970–71	Thottacheri (Part), 1963	81·34	7·61	1,255·65	165·00	....
3	1971–72	Alathur, 1958	2·02	2·10	551·25	262·50	....
4	1971–72	Kattur, 1961	8·09	7·70	821·25	106·66	....
5	1972–73	Thandalam (Part), 1962	20·23	10·20	2,157·75	211·54	100·00 hactare clear felled in 1973–74.
6	1973–74	Kattur, 1962	7·69	7·70	3,020·00	392·21	....
7	1973–74	Thandalam (Part), 1962	20·23	10·00	1,235·00	123·50	....
8	1973–74	Kattugudalur, 1962	41·28	41·30	781·60	18·92	....
9	1973–74	Thottacheri (Part), 1962	40·47	39·50	16,826·20	425·98	....

Serial number.	*Year of clear-felling.*	*Name and year of plantation.*	*Area in hectares.* *As per Permanent Register of Plantation.*	*As per Control Book.*	*Total revenue released.*	*Revenue realised per hectare.*	*Remarks.*
(1)	(2)	(3)	(4)		(5)	(6)	(7)
			5. *Madurantakam Range.*—cont				
10	1973–74 ..	.. Thottacheri (Part), 1963	81·34	73·30	35,430·40	483·36	....
11	1973–74 ..	.. Kattur, 1964	19·83	20·20	4,925·00	243·81	....
12	1973–74 ..	.. Kattugudalur, 1963	56.66	74·80	1,619·20	21·65	....
13	1974–75 ..	.. Alathur, 1964	21·85	21·85	9,139·00	418·26	....
14	1974–75 ..	.. Kattur, 1964	20·23	20·23	11,196.00	553·44	
15	1974–75 ..	.. Acharapakkam, 1964	4·86	4·04	75·00	18·56	..
16	1974–75 ..	.. Kattugudalur, 1964	4·05	4·04	57·00	14·11	....
17	1974–75 ..	.. Thottacheri, 1964	86·60	80·94	58,297·00	720·25	....
18	1974–75 ..	.. Kattur (Bits I and II), 1965	10·12	14·10	3,328·00	236·03	....
19	1974–75 ..	.. Thandalam, 1965	29·95	30·40	12,015·00	395·23	..
20	1974–75 ..	.. Rajapalayam, 1965	21·45	20·20	3,820·00	189·11	....
21	1974–75 ..	.. Thottachari, 1965	39·25	40·50	33,015·00	815·19	....
22	1974–75 ..	.. Chittarkadu, 1965	19·42	19·40	846·00	43·61	....
23	1974–75 ..	.. Kattur (Bits I and II), 1966	35·61	35·60	7,370·00	207·02	....
24	1974–75 ..	.. Thottacheri, 1966	17·40	17·00	1,110·00	64·71	....
25	1974–75 ..	.. Thandalam, 1966	39·66	39·70	10,004·00	251·99	
26	1974–75 ..	.. Rajapalayam, 1966	40·47	40·50	2,291·00	56·57	

N. B.—In arriving at the figure in column 8 the areas as noted in the Control Book has been taken into consideration.

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STATEMENT OF PRICES FETCHED FOR THE STONE QUARRIES OF THE MINOR FOREST PRODUCE WORKING CIRCLE.

Serial number.	Name of quarry.	Revenue realised in rupees.									
		1966–67.	1967–68.	1968–69.	1969–70.	1970–71.	1971–72.	1972–73.	1973–74.	1974–75.	1975–76
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	1. TIRUVALLUR RANGE.										
	No quarries.										
	2. TAMBARAM RANGE.										
1	Tambaram quarry No. 1	1,650·00	1,540·00	Sale dropped.	1,515·00	1,515·00	,295·00	2,300·00	Lease upto 31st May 1974.	Sale dropped.	..
2	Do. No. 2	Sale dropped.	Sale dropped.	Sale dropped.	No demand	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	1,300·00	..
3	Do. No. 3	Not available.	418.00	460·00	410·00	410·00	1,825·00	1,800·00	Lease upto 31st May 1974.	1,300·00	..
4	Do. No. 4	1,445·00	1,590·00	1,749·00	1,530·00	1,530·00	2,531·00	2,529·00	Do.	3,220·00	
5	Do. No. 5	3,120·00	4,389·00	4,828·00	4,850·00	4,850·00	Sale dropped.	Sale dropped.	Sale dropped.	11,400·00	..
6	Do. No. 6	3,130·00	3,44.300	3,788·00	Nodemand	Sale dropped.	8,300·00	8,300·00	Lease upto 31st May 1974.	8,600·00	..
7	Do. No. 7	450·00	495·00	545·00	525·000	525·00	3,100·00	3,100·00	Do.	2,160·00	..
8	Do. No. 8	880·00	968·00	1,065·00	1,015·00	1,015·00	1,711·00	1,709·00	Do.	2,200·00	..
9	Do. No. 9	2,513·00	5,528·00	6,081·00	1,375·00	1,375·00	8,251·00	8,249·00	Do.	8,250·00	..
10	Do. No. 10	460·00	430·00	Sale dropped.	415·00	415·00	Sale dropped.	Sale dropped.	Sale dropped.	1,780·00	..
11	Do. No. 11	4,365·00	4,802·00	5,283·00	5,325·00	5,325·00	Do.	Do.	Do.	Sale dropped.	..
12	Do. No. 12	3,620·00	3,982·00	4,381·00	2,050·00	2,050·00	Do.	Do.	Do.	6,445·00	..

STATEMENT OF PRICES FETCHED FOR THE STONE QUARRIES OF THE MINOR FOREST PRODUCE WORKING CIRCLE.

Serial number.	*Name of quarry.*	*Revenue realised in rupees.*									
		1966–67.	1967–68.	1968–69.	1969–70.	1970–71.	1971–72.	1972–73.	1973–74.	1974–75.	1975–76.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
				2. TAMBARAM RANGE—*cont.*							
13	**Tambaram** quarry No. 13	2,100·00	4,620·00	5,082·00	5,125·00	5,125·00	7,760·00	7,760·00	Lease upto 31st May 1974.	9,950·00	..
14	Do. No. 14	2,010·00	2,211·00	2,433·00	2,470·00	2,470·00	3,760·00	3,760·00	Do.	Sale dropped.	..
15	Do. No. 15	..	15,100·00	16,610·00	18,271·00	20,099·00	26,678·00	27,652·00	Do.	36,550·00	..
16	Do. No. 16	3,320·00	3,652·00	Sale dropped.	4,655·00	4,655·00	10,614·00	10,596·00	Do.	8,800·00	..
17	Do. No. 17	3,270·00	Sale dropped.	Sale dropped.	Nodemand	Sale dropped.	4,931·00	Nil.	3,571·25	Sale dropped.	..
18	Do. No. 18	360·00	396·00	436·00	425·00	425·00	780·00	78 ·00	Lease upto 31st May 1974.	1,150·00	..
19	Do. No. 19	545·00	600·00	66 ·00	645·00	645·00	1,071·00	1,069·00	Do.	615·00	..
20	Do. No. 20	Sale dropped.	Sale dropped.	Sale dropped.	Nodemand	Sale dropped.	2,500·00	2,500·00	Do.	Sale dropped.	..
21	Do. No. 21	Sale dropped.	Sale dropped.	Sale dropped.	420·00	420·00	736·00	729·00	Do.	960·00	..
22	Do. No. 22	2,630·00	2,893·00	3,100·00	3,225·00	3,225·00	4,920·00	4,910·00	Do.	Sale dropped.	..
23	Do. No. 23	2,485·00	Sale dropped.	Sale dropped.	Nodemand	Sale dropped.	1,500·0	1,500·00	Do.	765.00	..
24	Do. No. 24	4,740·00	5,214·00	5,376·00	5,730·00	5,730·00	12,795·00	5,025·00	Lease upto 31st May 1974.	11,650·00	..
25	Do. No. 25	Not included in the Working Circle.									
26	Do. No. 26	Not included in the Working Circle.									
27	Do. No. 27	935·00	1,029·00	930·00	1,050·00	1,050·00	1,618·00	1,612·00	Do.	2,070·00	..

28	Do.	No. 28				Sale dropped.	800·00	730·00	855·00	855·00	2.670·00	Lease upto 31st May 1974.	Do.	1,725.00	
9	Do.	No. 29	..		..	6,710·00	7,381·00	8,120·00	No demand.	2,100·50	6,627·00	5,023·00	Do.	8,400·00	..
30	Do.	No. 30	..	..	..	2,620·00	2,882·00	3,171·00	3,140·00	3,140·00	9,700·00	9,400·00	Do.	Sale dropped	..
31	Do.	No. 31	..	..	..	2,000·00	2,200·00	2,420·00	2,420·00	2,420·00	3,720·00	3,710·00	Do.	5,020·00	..
32	Do.	No. 32	..	..		1,000·00	1,100·00	1,210·00	1,225·00	1,225·00	1·940·00	1,940·00	Do.	2,530·00	..
33	Do.	No. 33		..	..	160·00	176·00	196·00	230·00	230·00	365·00	360·00	Do.	455·00	..
34	Do.	No. 34	..	..	..	Sale dropped.	Sale dropped.	Sale dropped.	No Demand	Sale dropped.	1,251·00	1,249·00	Do.	1,720·00	
35	Do.	No. 35	..	..	..	Not included in the Working Circle.									
36	Do.	No. 36	..	..	..	170·00	Sale dropped.	200·00	250·00	250·00	400·00	395·00	Do.	500·00	..
37	Do.	No. 37	..	..	..	365·00	451·00	..	470·00	470·00	1,420·00	Lease upto 31st May 1974.	Do.	940·00	..
38	Do.	No. 38	..	..	..	Not included in the Working Circle.									
39	Do.	No. 39	..	..	..	1,010·00	1,111·00	1,223·00	1,500·00	1,500·00	2,220·00	2,210·00	Do.	2,930·00	..
40	Do.	No. 40	..		..	800·00	Sale dropped.	Sale dropped.	1,330·00	830·00	Sale dropped.	Sale dropped.	Sale dropped.	1,685·00	..
41	Do.	No. 41	..	..	..	Sale dropped.	Sale dropped.	Sale dropped.	245·00	245·00	507·00	503·00	Lease upto 31st May 1974.	585·00	..
42	Pulikaradu Quarry	No. 1	..	..	..	Sale dropped.	Sale dropped.	Sale dropped.	315·00	315·00	560·00	560·00	Do.	730·00	..
3	Do.	No. 2	..	..	..	480·00	495·00	545·00	560·00	560·00	1,730·00	Lease upto 31st May 1974.	Do.	1,160·00	..
[illegible]	Do.	No. 3	..	..	..	Sale dropped.	Sale dropped.	Sale dropped.	400·00	400·00	1,400·00	Do.	Do.	910·00	..
[illegible]	Do.	No. 4	..	..	..	820·00	902·00	993·00	765·00	765·00	2,800·00	Do.	Do.	1,830·00	..
[illegible]	Do.	No. 5	..	..	..	375·00	Sale dropped.	400·00	325·00	325·00	1,625·00	Do.	Do.	1,075·00	..

STATEMENT OF PRICES FETCHED FOR THE STONE QUARRIES OF THE MINOR FOREST PRODUCE WORKING CIRCLE.

Serial number.	Name of quarry.	Revenue realised in rupees.									
		1966–67.	1967–68.	1968–69.	1969–70.	1970–71.	1971–72.	1972–73.	1973–74.	1974–75.	1975–76.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	3. TAMBARAM RANGE—cont.										
	1966–67	**1967–68**	**1968–69**	**1969–70**	**1970–71**	**1971–72**	**1972–73**	**1973–74**	1974–75	**1975–76**	
47	**Pulikaradu quarry No. 6**	375·00	Sale dropped.	Sale dropped.	905·00	905·00	1,380·00	1,035·00	**Lease upto 31stMay 1974.**	**Sale** dropped.	..
48	**Do.** No. 7	825·00	908·00	999·00	1,020·00	1,020·00	1,575·00	790·00	Do.	2,060·00	..
49	Do. No. 8	382·00	421·00	464·00	445·00	445·00	760·00	760·00	Do.	985·00	..
50	**Do.** No. 9	420·00	462·00	900·00	475·00	475·00	738·00	732·00	Do.	980·00	
51	**Do.** No. 10	420·00	462·00	509·00	485·00	485·00	785·00	785·00	Do.	1,027·00	..
52	**Do.** No. 11	530·00	583·00	642·00	665·00	665·00	1,060·00	1,060·00	Do.	560·00	
53	**Do. No. 12**	3,825·00	Sale dropped.	Sale dropped.	3,825·00	3,825·00	5,760·00	5,760·00	Do.	7,515·00	..
54	**Do. No. 13**	535·00	589·00	648·00	675·00	675·00	1,060·00	1,060·00	Do.	1,375·00	..
55	**Do. No. 14**	380·00	605·00	666·00	675·00	675·00	1,098·00	1,092·00	Do.	1,400·00	..
56	**Do. No. 15**	**Sale dropped.**	**Sale dropped.**	**Sale dropped.**	**Nodemand.**	**Sale dropped.**	811'00	609·00	**Lease upto 31st May 1974.**	1,105·00	..
	Do. No. 16	**2,070·00**	**Do.**	**Do·**	**Do.**	**Do.**	**Saale dropped.**	**Sale dropped·**	**Sale dropped.**	**1,500·00**	..
	Do. No. 17	**885·00**	**974·00**	**1,072·00**	**1,086·00**	**1,585·00**	**1,644·00**	**1,626·00**	Do.	**2,185·00**	..
	Do. **No. 18**	**730·00**	**803·00**	**884·00**	**1,450'00**	**1,450'00**	**3'820'00**	**Lease upto 31stMay 1974.**	**Do.**	**1,500.00**	..
	Do. No. 19	**5,910·00**	**6,501·00**	**7,152·00**	**Nodemand·**	**Sale dropped.**	**Sale dropped**	**8,800.00**	**Do**	**Sale dropped.**	..
61	Do. No. 20	**975·00**	**Sale dropped.**	**Sale dropped.**	Do.	Dc.	Do.	**1,010.00**	**Do.**	**1,400.00**	..

62	Do.	No. 21	615.00	770·00	860·00	975·00	975.00	2,561.00	489.00	Do.	2,015.00	..
63	Do.	No. 22	355·00	473·00	521·00	555·00	555·00	855.00	64.500	Do.	1,110.00	..
64	Do.	No. 23	355·00	391·00	431·00	800·00	800·00	2,140.00	Lease up to 31st May 1974.	Do.	1,485.00	..
65	Do.	No. 24	..	..	Sale dropped.	No demand.	Sale dropped.	1,230.00	Do.	..	510.00	..
66	Do.	No. 25	..	..	..	..	..	..	..	..	3,000.00	..
67	Do.	No. 26	..	..	..	..	..	..	..	..	4,015.00	..
68	Do.	No. 27	..	..	..	..	..	..	..	..	3,500.00	..
69	Do.	No. 28	..	..	..	..	..	..	..	..	2,330.00	..
70	Do.	No. 29	..	..	..	..	..	..	..	..	2,100.00	..
71	Do.	No. 30	..	..	..	..	..	..	..	..	1,110.00	..
72	Do.	No. 31	..	..	..	..	..	..	..	..	4,030.00	..
73	Do.	No. 32	..	..	..	..	..	..	..	..	3,410.00	..
74	Do.	No. 33	..	..	..	..	..	..	..	..	3,320.00	..
75	Do.	No. 34	..	..	..	..	..	..	..	..	Sale dropped.	..
76	Unamanjeri quarry	No. 1	Sale dropped.	Sale dropped.	Sale dropped.	Nodemand	Sale dropped.	Not sold.	4,730·00	Sale dropped.	Not available.	..
77	Do.	No. 2	Do.	Do.	Do.	Do.	Do.	3,050·00	Two year lease,	Do.	..	..
78	Do.	No. 3	Do.	Do.	Do.	Do	Do.	2,500·00	Do.	2,650·00	..	..
79	Do.	No. 4	Do.	Do.	930·00	950·00	950.00	1,900·00	Do.	2,205·00	..	..
80	Do.	No. 5	3,115·00	3,427·00	3,770·00	3785·00	3,78500	Sale dropped.	3,194·00	5,140·00	..	..
81	Do.	No. 6	Sale dropped.	Sale dropped.	Sale dropped.	No demand	Sale dropped.	2,289.00	1,141·00	2,368·00	..	..
82	Do.	No. 7	2,010·00	Do.	Do.	Do.	Do.	Sale dropped.	1,750·00	Sale dropped.	..	..

STATEMENT OF PRICES FETCHED FOR THE STONE QUARRIES OF THE MINOR FOREST PRODUCE WORKING CIRCLE—*cont.*

Serial number.	Name of quarry.		Revenue realised in rupees.									
			1966–67.	1967–68.	1968–69.	1969–70.	1970–71.	1971–72.	1972–73.	1973–74.	1974–75.	1975–76.
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
						2. TAMBARAM RANGE—*cont.*						
83	Unamanjeri quarry	No. 8	1,315·00	1,447·00	796·00	No demand.	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	..	..
84	Do.	No. 9	Sale dropped.	Sale dropped.	Sale dropped.	Do.	Do.	Do.	Do.	Do.	..	..
85	Do.	No. 10	Do.	Do.	Do.	Do.	2,000.00	10,000·00	Two years lease.	4,740.00	..	..
86	Do.	No. 11	Do.	Do.	Do.	Do.	3,000.00	4,000·00	Do.	3408·00	..	..
87	Do.	No. 12	Do.	Do.	Do	Do.	3,000·00	6,020·00	Do.	4,671·00	..	..
88	Do.	No. 13	Do.	Do.	Do.	Do.	2,000·00	Sale dropped.	1,775·00	Sale dropped.	..	..
89	Do.	No. 14	Do.	Do.	Do.	Do.	Sale dropped	2,045·00	1,020·00	2,281·00	..	..
90	Do.	No. 15	Do.	Do.	Do.	Do.	Do.	Sale dropped.	4,435·00	Sale dropped.	..	..
91	Do.	No. 16	..	..	..	..	..	2,150·00	1,070·00	Do.	..	..
92	Do.	No. 17	..	..	..	..	..	2,400·00	1,200·00	3,825·00	..	..
93	Do.	No. 18	..	..	..	..	..	..	..	15,005·00	..	..
94	Do.	No. 19	..	..	..	..	..	..	..	30,100·00	..	..
95	Do.	No. 20	..	..	..	..	..	..	..	3,000·00	..	..
96	Nanmangalam quarry	No. 1	Not available.	2,501·00	3,026·00	No demand.	Sale dropped.	640·00	310·00	3,625·00	..	
97	Do.	No. 2										
98	Do.	No. 3										
99	Do.	No. 4										
100	Do.	No. 5	..	..	..	1,350·00	675·00	Sale dropped.	Sale dropped.	1,420·00	..	

3. KELAMBAKKAM RANGE.

No quarries.

4. CHINGLEPUT RANGE.

1	Appur quarry	Not sold.	Not sold.	430·00	Two years lease.	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	..

5. MADURANTAKAM RANGE.

1	Oragadam quarry No. 1	..	..	..	..	Sale dropped.	Sale dropped.	Sale dropped.	1,500·00	Two years lease.	..
2	Do. No. 2	..	..	..	..	Do.	Do.	Do.	1,510·00	Do.	..
3	Do. No. 3	..	..	..	..	..	..	..	40,050·00	Do.	..
4	Do. No. 4	..	..	..	..	..	..	..	Sale dropped.	Sale dropped.	..

STATEMENT OF PRICES FETCHED FOR MINOR FOREST PRODUCE UNITS OF THE MINOR FOREST PRODUCE WORKING CIRCLE.

Serial number and name of the M.F.P. Unit.	1966-67. Produce sold.	1966-67. Revenue realised. in rupees.	1967-68. Produce sold.	1967-68. Revenue realised in rupees.	1968-69. Produce sold.	1968-69. Revenue realised in rupees.	1969-70. Produce sold.	1969-70. Revenue realised in rupees.	1970-71. Produce sold.	1970-71. Revenue realised in rupees.
(1)	(2)	(2-a)	(3)	(3-a)	(4)	(4-a)	(5)	(5-a)	(6)	(6-a)
1. Tiruvallur Range		Sale dropped.	–	76·00	M.F.P. Aamvar bark.	80·00 20·00	Sale dropped.	Sale dropped.	Palmyrah leaves 4,050 Nos. Avaram bark.	84·00 Sale dropped.
2. Tambaram Range		Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	Sale droped.	Sale dropped.	Sale dropped.	Sale dropped.	Do.
3. Kelambakkam Range.		Sale dropped.	Sale dropped.	Do.	Do.	Do.	Do.	Do.	Do.	Do.
4. Chingleput Range		Do.	Do.	Do.	Do.	Do.	Do.	Do.	Do.	Do.
5. Madurantakam Range	M.F.P. Palmyrah leaves.	152·00 612·00	Do.	Do.	All M.F.P.	160·00	Palmyrah leaves.	162·00	Palmyrah leaves.	164·00

STATEMENT OF PRICES FETCHED FOR MINOR FOREST PRODUCE UNITS OF THE MINOR FOREST PRODUCE WORKING CIRCLE—*cont.*

Serial number and name of the M.F.P. unit.	1971-72. Produce sold.	1971-72. Revenue realised. in rupees.	1972-73. Produce sold.	1972-73. Revenue realised. in rupees.	1973-74. Produce sold.	1973-74. Revenue realised in rupees.	1974-75. Produce sold.	1974-75. Revenue realised in rupees.	1975-76. Produce sold.	1975-76. Revenue realised in rupees.
(1)	(7)	(7-a)	(8)	(8-a)	(9)	(9-a)	(10)	(10-a)	(11)	(11-a)
1 Tiruvallur Range	M.F.P. Avaram bark.	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	M.F.P. Avaram bark.	42·00 20·00	..	..
2 Tambaram Range	M.F.P.	163·00	Sale dropped.	Sale dropped.	M.F.P.	180·00	M.F.P.	175·00	..	..
3 Kelambakkam Range	Sale droped.	Sale dropped.	Do.	Do.	Do.	Do.	M.F.P.	52·00	..	..
4 Chingleput Range	M.F.P.	94·00	Do.	Do.	Do.	Do.	Do.	100·00	..	..
5 Madurantakam Range	Do.	Do.	Do.	Do.	Do.	Do.	Do.	175·00	..	..

189. *Area falling under the erstwhile Chingleput Working Plan during the period* 1944-45, 1948-49—*General.*—During World War II there was a large influx of population into Madras City because of the Japanese invasion and consequently all the private Casuarina topes in the vicinity of Madras were over exploited to supply firewood to Madras City. Besides, owing to lack of coal and furnance oil for industrial concerns, large quantities of fuel which would have normally been available for domestic use were divered to these industries. It was, therefore, decided in 1944 to augment the resources of Casuarita fuel within economically feasible distance of Madras to ensure a sustained supply of fuel in the future. During this period, the forests managed by the Panchayats were transferred back to the Forest Department one after another. After the resumption of these forests by the Forest Department attempts were made at raising Casuarina plantations. A few small scale plantations of miscellaneous species were also raised.

190. *Casuarina Working Circle.*—Six series were formed for planting Casuarina and planting carried out between 1949-63. Due to adverse ecological factors, defective technique and inadequate attention by the staff, there were large scale failures in the plantations raised. As a natural sequence further planting of the species was stopped from 1950. In 1958 all the plantations of this working circle were ordered to be clearfelled on the ground that they were vulnerable to theft. This policy sounded the death knell of Casuarina planting in the forests of this district resulting in the scheme being given up.

191. *Fuel Working Circle.*—This working circle was constituted with the object of bringing the highly degraded forests under concentrated regeneration operations with miscellaneous fuel species. The selection of the area and the mode of regeneration were left to the territorial Forests Officer. A rotation of 30 years was fixed. Out of a total area of 10.50 sq.km. (2,595 acres) spread over five planting series, an area of 2.17 sq. km. (535 acres) ranging from 4.05 ha. to 16.19 ha. (10 to 40 acres) annually was regenerated during the years 1949 to 1953. In view of poor results, further attempts in planting were given up in 1953.

192. *Manure Leaf Working Circle*—The plains portions of reserved forests surrounding the villages were allotted to this working circle. Eight felling series were constituted Lopping of trees and shrubs of manurial value on a felling cycle of three years was prescribed. In actual practice it was found impossible to regulate the removal of manure leaves from the coupes prescribed for the year as the villagers took their requirements from areas nearest to their village and not from the prescribed coupes.

193. *Minor Forest Produce Working Circle*—The important minor forest products of this division were sold annually to purchasers having each range as a unit of lease. The demand was not considerable.

194. *Grazing Working Circle.*—Except for the areas notified for closure, all areas were included in this working circle. The rates varied from 3 annas to 12 annas. These were continued till 1953 when the Government in G.O. Ms. No. 3447, Development, dated 25th September 1953 fixed uniform grazing fees for all the reserves of this State as follows.—

	Rs.	A.	P.
Buffalos.	0	8	0
Cows.	0	4	0
Sheep.	0	2	0

195. *Fuel regeneration areas.*—Several reafforestation schemes were implemented under the First and Second Five-Year Plans but from 1953 onwards large scale reafforestation schemes were embarked upon. This new venture was more idealistic than practical and resulted in failure because of lack of experience in tackling vast areas, imperfections in the regeneration technique and selection of species not always suited to the locality.

196. The Working Plan for Saidapet Division for the ten year period from 1956-57 to 1965-66 and the Working Plan for Chingleput Division for the fifteen year period from 1958-59 to 1971-72—The following working circles constituted under the two working plans were in operation in the division :

(i) Cashew Working Circle.

(ii) Rehabilitation Working Circle.

(iii) Fuel Working Circle.

(iv) Protection Working Circle.

(v) Minor Forest Produce Working Circle.

(vi) Grazing Working Circle.

197.—*Cashew Working Circle.*—This working circle was comprised of ex-Panchayat reserved forests containing deep red loamy soil considered, suitable for cashew. The total area prescribed for planting was 103.83 sq. km. (25,658 acres) of whch 95.82 sq. k.m. 23,677 acres) was planted up between 1956 and 1960 excluding an extent of planted area of 8.32 sq. km. (2,057 acres) in Sathiavedu Range which was transferred to Andhra Pradesh as a result of the Pateskar award. The technique prescribed consisted of removal of existing growth in strips 3.05 m. (10 feet) wide and 10.6 m. (33 feet) apart and dibbling of Cashew seeds in 30.50 cm. (1 foot) cube pits dug 5.03 m. (16½ feet) apart in the cleared planting strips. Site preparation was to be completed in December prior to the year of planting and the excavated soil from the pits allowed to weather during the hot weather till may when it was to be refiled in the pits and dibbling done during the south-west monsoon at the rate of one seed per pit at a depth of 5 c.m. to 7.60 c.m. (2 to 3 inches) and in an upright position with the stalk and facing upwards. A saucer 0.92 m. (3 feet) in radius was formed around each pit to conserve moisture. Sowing was to continue in blank pits upto the end of September and any blanks occurring thereafter were to be beaten up with contained plants at the commencement of the north-east monsoon. In addition, weeding and soil-working during the first two years were prescribed to be carried out. Thinning, if necessary, was prescribed to be carried out by felling alternate trees in the planting line resulting in an ultimated spacing of 9.14 m. x 9.14 m. (33 feet x 33 feet). The slow rate of growth, however, did not justify any thinning being carried out during the period of these working plans. Other sailent prescriptions were as follows :

(i) The plantations were to be closed to grazing during the first three years including the year of formation.

(ii) Plantations were to be sold for exploitation of their usufructs through contractual agency from the sixth year onwards but could be sold earlier if an adequate yield of nuts was assured.

(iii) One Forester was to be in charge of 202.34 ha. (500 acres) of plantation during the first two years and from the third year onwards one Forest Guard and one Watcher were to be incharge of 202.34 ha. (500 acres) and one Forester in charge of 404.69 ha. (1000 acres) of plantations.

198. In 1962 or there abouts a decision was taken to clear (fell and uproot) all the intervening jlngle growth and maintain proper tillage of the soil by ploughing the plantations as it was found that the Cashew was not thriving due to root competition from the jungle growth and lack of adequate aeration in the soil. As Kumridars were not forthcoming for this work as in the nearby Cuddalore South Division it was executed departmentally. At the same time it was also decided to profitably utilise the cleared strips by planting Eucalyptus tereticornis in them to suppress any jungle growth that may reappear and to meet the growing firewood needs of Madras City as the Cashew was slow grown and would take time to cover up the vacant ground. The Eucalyptus was pltnted out 1.83 m. (6 feet) apart in two planting lines laid 1.22 m. (4 feet) apart between sucessive Cashew lines (440 per acre). The planting technique consisted of planting out nursery raised container plants of the species in 30.50 cm. (1 foot) cube pits. The work of interplanting or infilling was commenced in 1961 and went on till 1965. The area covered was 23.79 sq.. km.

199. Rehabilitation Working Circle.—This working circle was formed to rehabilitate the degraded ex-Panchayat forest. The area of the working circle in both Chingleput and Saidapet Divisions was 62.43 sq. km. (15,420 acres). The areas to be tackled were categorised as A, B, C depending the nature of the existing useful growth and the type of treatment to be accorded with a view to achieving complete restocking. Category A areas were those that contained saplings, poles or live tree stumps of useful spacies and which were saleable. Such areas were prescribed to be clear felled and regenerated by simple coppice. After clear felling the area was to be fenced and the coppice regeneration supplemented wherever necessary by artificial regeneration with nursery rtised container plants. Category B areas were those that contained immature growth. In such areas the treatment prescribed was to tend the existing crop and artificially regenerate blanks that were over 10.12 ha. (25 acres) in extent. Category C areas were those that contained neither live stumps nor advance growth or only sparse growth. The treatment prescribed for such areas was concentrated artificial regeneration adopting the saucer-pit, sunken-mound or trench-mound technique depending on the terrain. The choice for restocking the above areas fell on species such as Albizzia lebbek, Dalbergia sisoo, Azadirachta indica, Ancardium occidentale, Albizzia amara, Cassia siamia, Pongamia pinnata Eucalyptus tereticornis, Tamarindus indica, Acacia leucophloea, Acacia arabica and Acacia sundra.

200. The Saidapet working plan prescribed a convesion period of ten to thirty years and the Chingleput working plan ten to twelve years. Both the plans prescribed cultural operations and tending to be done up to the third year, raising of live fences and closure to grazing for the initial six years. Staggering of the annual area was prescribed to avoid large blocks continguous to villages being closed to grazing at a time thus obviating any hardship that may be caused to the villagers in grazing their cattle.

201. The results achieved over most of the areas under the various treatments were disappointing, both survival per cent and rate of growth being unsatisfactory, as the techniques were not intensive enough. The problem was state-wide and the results all over were equally poor. Hence, it was decided at the 1961 Conservators conference to discontinue such diffuse regeneration work in favour of regeneration a close espacement after complete jungle clearance and intensive soil preparation. It was also decided to tackle only areas in the plains in future. This working circle was not continued in Aslams working plan which came into force in 1966-67 for the composite Chingleput Division.

202. *Fuel Working Circle.*—The Fuel Working Circle existed only in Saidapet Division and out of sixteen felling series in the working circle fourteen were transferred to Andhra Pradesh on 1st April 1960 as a result of the Pataskar award. The series that remained in the division were Krishnareddikona (521.64 ha.) and Nekkalakona (235.93 ha.) The Silvicultural system adopted was simple coppice with reservation of certain fruit and minor forest produce yielding species. The rotation prescribed was thirty years.

203. *Protection Working Circle.*—All areas not alloted to other working circles other than the Minor Forest Produce and Grazing Working Circles, were allotted to this working circle. While the working plan did not prescribe any operations in this working circle works such as raising of fodder and pasture plantations, etc., wore to be taken up in the treas allotted to this working circle. The special schemes implemented in these areas are referred to separately.

204. *Minor Forest Produce Working Circle.*—The working circle covered all the forest areas under the control of the department. The number of minor forest produce items was twenty one and the Range was the unit of lease. The stone quarris in Tambaram Range which yielded substantial revenue were included in this working circle.

205. *Grazing Working Circle.*—The working circle covered all the forest areas under the control of the department except those areas closed to grazing for specific purposes. The grazing fees at the time were as follows:

Per Head.

	Rs. P.
Buffalo	0·50
Cow	0·25
Sheep	0·12

These fees were fixed in G.O. No. 836, Development, dated 29th Mtrch 1938 and were in force till the middle of June 1964 when they were doubled in G.O. No. 58072|D.II|64-4, Food and Agriculture, dated 16th June 1974.

206. *Development Scheme under Five-Year Plans.*—The following schemes were implemented in the division under the Second Five-Year Plan (1956-61):—

Serial number. (1)	*Name of scheme.* (2)	*Area (in square Km).* (3)	*Remarks.* (4)
(i)	Afforestation of dry fuel forests ..	15·08	
(ii)	Soil conservation in low hill areas	4·36	
(iii)	Cashew cultivation	95·58	
(iv)	Expansion of planting activities of valuable commercial timber and other hardwood species	0·72	
(v)	Development of fodder and pasture ..	31·87	
(vi)	Construction of buildings	8 Nos.	Combined residential quarters for Forest Guards and Watchers.

207. (i) *Afforestation of dry fuel forests.*—The prescriptions overlapped those of the Rehabilitation Working Circle.

208. (ii) *Soil Conservation in low hill areas.*—The scheme was implemented in areas included in the Protection Working Circle and in Pullikundram R.L. The results achieved were poor due to lack of intensiveness of the regeneration technique and difficulty in protecting the regeneration.

209. (iii) *Cashew cultivation.*—The prescription overlapped those of the Cashew Working Circle. The scheme was a success as may be seen at present.

210. (iv) *Expansion of planting activities of valuable commercial timber and other hardwood species.*—Under this scheme Teak, Eucalypt and Red Sanders were raisd. While Teak did not fare well, as was only to be expected considering the aridity of the tract, Eucalypt fared satisfactorily. A series of Red Sanders plantations were raised successfully in Mailapore Reserved Forests.

211. (v) *Development of Fodder and Pasture.*—This scheme was implemented in areas allotted to the Protection Working Circle. As the scheme did not prove very successful it was discontinued from 1st February 1963 as per orders in Government Memorandum No. 14298-D-II|1692-6, Food and Agriculture, dated 31st December 1962. There were, however, a few exceptions such as the Vembedu and Vengal plantation of 1958 and 1960 respectively. Some of the areas tackled under this scheme were subsequently reafforesed with other species.

212. (vi) *Construction of buildings.*—Eight combined residential quarter for Forest Guards and Watchers were constructed.

213. *Green Manure Seed Farms.*—In accordance with the orders of Government in G.O. Ms. No. 379, Food and Agriculture, dated 8th February 1960 to raise Green Manure, Seed Farms in suitable forest areas for production of seed of such green manure species as Sesbania Daincha and Sunhemp for supply to ryots a Green Manure Seed Farm of 8.09 ha (20 acres) was started in 1960-61 on a pilot scale. It was soon realised that normal growth of the crops and production of seed could not be obtained on dry sites, which were alone available in the forests, without the adoption of intensive cultivation method and irrigation. The scheme, therefore did not work profitably and was wound up as per orders of the Government in its Memorandum No. 36717|F1|62-12, Food and Agriculture, dated 6th May 1963.

214. The following schemes were implemented in the division under the Third Five-Year Plan (1961-66).

(i) Farm Forestry.

(ii) Soil conservation in forest areas.

(iii) Rehabilitation of degraded forests by aforestation.

(iv) Raising fuel wood plantations for Madras City.

215. (*i*) *Form Forestry Scheme.*—This scheme, which was formulated to provide the requirements of forest produce of the rural folk and at the same time prevent soil erosion in areas outside the reserved forests, was first implemented in the Division in Tirukalikundram and Sriperumbudur Development Blocks over an extent of 516.90 ha. in 1960-61. The areas planted in subsequent years under the Third Five-Year Plan were as follows :

Year.	*Area planted up in ha.*	*Number of Development Blocks.*
1961–62	638·55	17
1962–63	493·13	21
1963–64	894·90	20
1964–65	513·45	17
1965–66	392·54	17

The main species raised in these plantation were Eucalypt and Babul and to a lesser extent Cashew, Casuarina and other miscellaneous species. The planations generally were a success except where the oil was alkaline. The scheme was continued in subsequent years due to its success.

216. (ii) *Soil Conservation in forest areas and* (iii) *Rehabilitation of degraded forests by aforestation.*—The schemes were implemented during 1961-62 and 1963-64 over an extent of 526.18 ht. and 427.75 ha. respectively. These were generally unsatisfactory and failed due to the problem of protection from cattle grazing.

217. (iv) *Raising fuel wood plantations for Madras City.*—The object of the scheme was to raise large scale plantations with fast grown fuel wood species to augment firewood supplies to Madras City. The main species used was Eucalyptus tereticornis. The technique consisted in planting out containerless transplants 30 to 40 cm. tall in 30 cm. 3 pits dug at 2 m^2 or 3m^2 espacement after clearance and uprootal of all jungle growth and ploughing the ground. The rotation was fixed at 10 years and the annual area at 526 ha. There appears to have been difficulty in achieving the target and modification appear to have been made by taking up failed patches in Fodder and Pasture and Cashew plantations for planting. The extent successfully planted up pure with Eucalypt under this scheme was 1,734.81 ha.

218. *Thiru S. M. A. Aslams Plan.*—1966-67 to 1975-76—Aslam constivated six working circles as follows:—

(i) The Cashew working Circle—97.77 sq.km.

(ii) The Eucalyptus Working Circle—54.44 sq. km.

(iii) The Fuel Working Circle—7.58 sq. km.

(iv) The Minor Forest Produce Working Circle—All the forests of the division.

(v) The Grazing Working Circle—All the forests of the division except those areas closed to grazing.

(vi) The Soil Conservation Working Circle—33.23 sq.km.

At the outset it has to be mentioned that there was no rigid adherence to the prescriptions of the working plan and that while the division saw considerable plantation activity during the period of the plan what successive District Forest Officers carried out was a management of convenience based on Five-Year Plan Schemes and public clamour rather than the dictates of scientific management enshrined in the Working Plan.

219. *The Cashew Working Circle.*—The object of management of this working circle was to maintain the existing Cashew plantations in a state of high productivity and attain higher yields through proper cultural practices in order to meet the growing demand for Cashew raw nuts. For this purpose the plantations existing at the time were constituted into eight series, namely), Kattupakkam (1185.32 ha.), Thirukailkundaram (1352.4 aho Sembakkam (1352.06 ha.), Karumbakkam (1012.93 ha.), Kovalam (1149.71 ha), Vandalur (1132.72 ha), Guduvancherry (1199.49 ha.) and Uthukottai ha), Vandalur (1132.72 há.), Guduvancherry (1199.49 ha.) and Uthukkottai (1392.12 ha.).

220. The cultural practices prescribed were as follows:—

(i) Disposal of Eucalypt infillers.

(ii) Clearing and uprootal of jungle growth in the intervening strips, tractor ploughing of the strips and replacing casualities with either Cashew or miscellaneous species depending on soil suitability.

(iii) Selective pruning of the less vigorous and productive branches.

(iv) Thinning between the ages of 12 and 15 years if found necessary.

221 (i) The disposal of the Eucalypt infiller was prescribed as they were a hindrance to tractor ploughting of the plantations. This work was done in 1973-74 except in the 1956 Vandulur plantation and the prices fetched for the same are furnished in paragraph 151. The infillers in the 1956 Vandalur plantation were not felled in view of a proposal to shift the Madras Zoo to Vandalur R. F. As the proposal for shifting the zoo has not yet materlised the question of permitting the felling of the trees is pending decision by the Chief Conservator of Forests (General).

222. (iii) Details of clearing and upootal of jungle growth in the intervening strips, etc. are furnished in the subjcined statement. Additionally, gully plugging manuring and spraying of pesticides, all on a limited scale, were carried out. In 1967-68 i.e., during the Fourth Five-Year Plan, the Central Government sponsored a package programme of cultural practices to be carried out by the Cashew growing states. In this division the package consisted of the following cultural practices:

(*a*) Clearing of jungle growth—1,000 acres,

@ Rs. 10.00 to Rs. 15.00 per acre.

(b) Soil Working either mechanically or manually—1,007 areas at Rs. 10.08.

(*c*) Contour bunding—1000 acres @ Rs. 50.00 per acre.

(*d*) Application of fertilisers—1000 acres

(*e*) Carrying out plant protection measures—1000 acres @ Rs. 26.00 for two sprayings.

The programme was implemented over a period of four years from 1967-68 to 1970-71 at a cost of Rs. 2,19,975.00 in the following four plantations :—

Gudalur 1956—101.17 hectares.

Tirutheri 1956—101.17 hectares.

Mylapore 1956—101.17 hectares.

Illalur 1956—101.17 hectares.

Manuring was done at the rate of 2 kg. per tree, the fertiliser used being the standard mixture No. 5 (9:9:9) consisting of Ammonium Sulphate, Super phosphate and Sulphate of potash. The plan protection measures, consisted in spraying of a pesticide (Endrin 20 per cent) and a fungicide (Fytolon) at the rate of 125 cc. of the former and 0.50 kg. of the latter per acre. Details of work done under the Central Package Programme are also furnished in the subjoined statement.

STATEMENT SHOWING THE DETAILS OF CULTURAL OPERATIONS CARRIED OUT IN CASHEW PLANTATIONS FROM 1966–67 to 1975–76.

Year of operation.	*Name and year of plantation.*	*Area in hectares.*	*Details of work done.*	*Area tended in hectares.*	*Expenditure incurred.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1966-67	Mailapore, 1956	209·22	Contour bunding	3·24	472·50	....
	Gudalur, 1958	203·15	Cultural operations	11·74	1,156·50	....
	Vandalur, 1957	209·63	Do.	7·28	616·00	....
	Sirukundram, 1959	57·46	Do.	46·94	6,423·00	....
1967-68	Gudalur, 1956	267·09	Cultural operation s including clearing of growth	104·00	5,356·87	....
	Palavakkam, 1957	212·87	Soil conservation measures	90·65	9,081·43	....
	Irugulam, 1956	202·34	Cultural operations including clearfelling	54·63	6,692·45	....
	Mailapore, 1956	209·22	Clearfelling and other cultural operations	101·17	8,392·70	Central package programme.
	Tirukalikundram, 1958	208·01	Soil conservation measures	63·94	3,342·00	....
	Manali, 1958	170·78	Do.	30·76	7,920·00	....
	Illalur, 1956	212·46	Cultural operation including clearfelling	101·17	6,204·80	Central package programme.
	Tirutheri, 1956	186·96	Do.	87·82	2,644·93	....
	Maiyur, 1956, 1958 and 1959	56·25	Soil conservation measures	56·25	6,815·50	....
1968-69	Tirukalikundram, 1958	209·01	Cultural operations	37·23	2,771·00	....
	Tirukalikundram, 1957	161·47	Contour bunding	40·46	3,280·00	....
	Maiyur, 1959	10·12	Cultural operations	10·12	630·25	....
	Tirutheri, 1956	186·96	Do.	101·17	32,879·48	Central package programme.
	Gudalur, 1958	203·15	Contour bunding	20·23	2,436·56	....
	Kattankolathur, 1958	217·31	Clearfelling and ploughing	67·99	7,032·00	....
	Gudalur, 1956	267·09	Do.	21·04	999·50	....
	Irugulam, 1960	112·50	Do.	105·22	1,796·25	....
	Vandalur, 1956	234·31	Clearfelling and ploughing and plant protection measures.	66·37	18,183·24	....
	Maiyur, 1956	36·02	Cultural operations	36·02	2,195·00	....

	Oragadam, 1960	162·48	Restocking of the area	27·92	3,218·90	....
	Maiyur, 1958	10·12	Cultural operations	10·12	698·00	....
	Mambakkam, 1957	174·26	Do.	80·94	7,262·35	....
			Contour bunding	40·46	4,325·25	....
	Alathur, 1959	81·66	Cultural operations	80·94	13,143·75	....
	Siruvanjur, 1957	303·96	Contour building	12·55	1,516·00	....
	Unamanjeri, 1959	129·09	Cultural operations	28·73	7,791·00	....
	Mailapore, 1956	..	Do.	101·17	17,740·75	Central package programme.
	Gudalur, 1956	267·09	Do.	101·17	32,988·55	Do.
			Gully plugging	..	2,809·00	....
	Illalur, 1956	212·46	Intensive cultural operations	101·17	39,055·72	Central package programme.
	Gudalur, 1958	203·15	Gully plugging	..	2,588·00	....
			Repairs to check dams	..	328·75	....
	Irugulam, 1956	202·34	Cultural operations	60·70	8,268·75	....
1979-70 ..	Kattankolathur, 1958	217·31	Clearing and ploughing	126·67	38,487·00	....
	Kattankolathur, 1957	13·76	Clearing, ploughing and plant protection measures	13·76	1,534·00	....
	Mambakkam, 1956	218·53	Intensive maintenance except spraying of pesticide	56·66	11,387·00	....
	Vandalur, 1956	234·31	Ploughing and plant protection measures	46·54	5,884·00	....
1970-71 ..	Maiyur, 1956	36·02	Application of fertiliser and plant protection measures	36·02	2,007·00	....
	Maiyur, 1959	10·12	Do.	10·12	364·00	....
	Siruvanjur, 1957	203·96	Intensive maintenance (Clearing, uprootal and ploughing).	22·96	15,978·00	....
	Kattankolathur, 1958	217·31	Do.	60·70	23,393·00	....
	Tirukalikundram, 1957	161·47	Ploughing, application of fertiliser and spraying of pesticide.	161·47	19,269·49	....
	Tirukalikundram, 1958	208·01	Intensive maintenance (Clearing, uprootal and ploughing).	138·59	33,916·60	....
	Vandalur, 1956	234·31	Do.	40·46	14,502·00	....
	Gudalur, 1957	210·44	Do.	109·27	24,549·82	....

Year of operation.	Name and year of plantation.	Area in hectares.	Details of work done.	Area tended in hectares.	Expenditure incurred.	Remarks.
	Gudalur 1958	203.15	Intensive maintenance (Clearing, uprootal and ploughing).	103.20	22338.00	....
	Tirutheri, 1956	186·96	Do. ..	101·17	26,133·00	Central package programme.
	Mambakkam, 1956	218·53	Do. ..	70·82	25,069·00	....
	Mambakkam, 1958	222·58	Do. ..	113·31	29,789·00	....
	Mailapore, 1956	209·22	Do. ..	101·17	12,582·00	....
	Palavakkam, 1957	212·87	Do. ..	50·59	7,400	....
	Irugulam, 1956	202·34	Do. ..	182·92	36,080·00	....
71-72 ..	Tirukalikundram, 1958	208·01	Plant protection measures	182·11	21,830·00	....
	Tirukalikundram, 1957	161·47	Do.	157·42	18,884·00	....
	Mambakkam, 1958	222·58	Application of fertiliser	30·35	2,808·00	....
			Tractor ploughing	25·50		
	Sengundram, 1958	226·62	Clearing, uprootal and application of fertiliser	151·76	55,378·00	....
			Spraying of pesticide	146·56		
	Tirutheri, 1956	186·96	Ploughing	10·12	1,171·00	....
	Erumaivettipalayam, 1960	142·85	Clearing and uprootal	6·07	6,094·00	....
			Application of fertiliser	61·51		
	Kattur, 1956	219·74	Clearing, uprootal, ploughing and application of fertilizer.	48·16	10,452·00	....
	Kattur, 1957	205·98	Do. ..	54·63	18,954·00	....
	Madayathur, 1958	205·18	Do. ..	154·59	27,619·00	....
			Plant protection measures	30·94		
	Illalur, 1957	111·65	Clearing, uprootal and application of fertilizer	194·25	22,922·00	....
	Alathur, 1959	81·66	Do.	38·04	1,524·00	....
	Oragadam, 1960	162·48	Intensive maintenance (Clearing, uprootal and ploughing).	12·14	2,294·00	....
	Mailapore, 1956	209·22	Do.	109·27	17,277·00	....

1971–72	**Palavakkam, 1957**	212·87	Ploughing	24·28	2,280·00	....
	Irugulam, 1960	112.50	Intensive maintenance (Clearing uprootal and ploughing)	101.17	18,020.00	....
	Manai, 1958	170·78	Clearing and uprootal	87.00	6,048.00	....
	Kattankolathur, 1961	10.11	Intensive maintenance (Clearing, uprootal and ploughing)	8.09	2,395.00	....
	Salur, 1959	195.46	Do.	174.82	32,452.00	....
	Kattankulathur 1958	217.31	Do.	32.37	8109.00	....
	Mambakkam, 1956	218.53	Do.	89.03	24,307.00	....
	Sonalur, 1959	214.08	Do.	80.94	21,417.00	....
	Sengundram, 1957	152.16	Do.	80.94	20,716.00	....
	Maganiam, 1959	211.65	Do.	80.94	18,394.00	....
	Nallur, 1959	52.61	Do.	52.61	9,798.00	....
	Nallur, 1960	197.08	Do.	80.94	20,910.00	....
	Vadakkupattu, 1956	207.19	Clearing	80.94	9,578.00	....
	Kattur, 1958	194.05	Intensive maintenance work including spraying of pesticide.	171.99	64,886.00	....
	Irugulam 1956	202.34	Do.	108.05	36,962.00	....
	Siruvanjur, 1957	203.96	Do.	121.41	27,307.00	....
	Thaiyur, 1957	60.70	Do.	60.70	20,318.00	....
	Anjur, 1959	184.94	Do.	151.76	53,347.00	....
	Vandalur, 1956	234.31	Do.	107.24	16,052·00	....
	Illalur, 1958	212.46	Do.	202.34	25,211.00	....
1972-73	Kattankolathur, 1958	217.31	Plant protection measures	217.32	14,860.00	....
	Mambakkam, 1956	218·53	Clearing	37.40	2,863.00	....
			Uprootal	24.00		
			Ploughing	17.00		
	Sirukundram, 1959	57·46	Clearing	36.10	7,74[illegible].00	....
			Ploughing	11.20		

Year of operation.	Name and year of plantation.	Area in hectares.	Details of work done.	Area tended in hectares.	Expenditure incurred.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
					RS.	
1972–73	Vandalur, 1956	234·31	Uprootal..	45.00	29,125·00	....
			Ploughing	45.00		
			Application of fertilizer	60.00		
			Spraying of pesticide	106.00		
	Unamanjeri, 1959	129·09	Clearing and uprootal..	20.00	3,824·00	....
			Ploughing	14.00		
	Mailapore, 1956	202.22	Clearing	13.00	9,393.00	....
			Ploughing	90.00		
	Irugulam, 1956	202.34	uprootal and ploughing Application of fertilizer	107.00 75.00	34,454.00	....
	Vadakkupattu, 1956	207.19	Clearing	32.00	6,511.00	....
			Uproota and ploughing	35.00		
1972–73 ..	Vandalur, 1958	189.39	Uprootal..	46.00	3,218.00	....
	Nallur, 1960	197.08	Clearing..	79.00	19,871.00	....
			Uprootal, ...	62.00		
			Ploughing	40.00		
			Appilcation of fertilizer	40.00		
			Sparying of pesticide	114.00		....
	Alathur, 1960	51.80	Intensive maintenance (Clearing, uprootal and ploughing)	18.50	2,459.00	....
	Oragadam, 1960	162.48	Do.	10.00	1,945.00	....
	Illalur, 1957	211.65	Clearing and uprootal	144.00	25,436.00	....
			Plant protection measure	180.00		....

	Thayiur, 1956	230.67	Clearing	140.00	17,774.00	....
			Uprootal	135.00		
			Ploughing	19.00		....
	Sirukundram, 1960	134.76	Clearing	66.00	12,362.00	..
			Uprootal	61.00		
			Ploughing	60.50		....
	Manali, 1958	170.78	Clearing and uprootal	108.80	25,318.00	....
			Ploughing	110.00		
	Erumaivettipalayam, 1960	142.85	Clearing and uprootal	50.00	6,938.00	....
			Ploughing	40.00		
	Mambakkam, 1958	222.58	Clearing and uprootal	60.00	11,287.00	....
			Ploughing	60.50		
	Irugulam, 1960	112.50	Intensive maintenance (Clearing, uprootal and ploughing)	100.00	11,720.00	....
	Kattur, 1958	194.65	Uprootal and ploughing	166.20		
			Application of fertilizer and sparying of pesticide	180.00	59,555.00	
	Siruvanjur, 1957	203.96	Uprootal and ploughing	48.00	42,863.00	
			Application of fertilizer and spraying of pesticide	121.00		....
	Sengundram, 1958	226.62	Uprootal	147.00	58,740.00	....
			Ploughing	140.00		
			Application of fertilizer and spraying of pesticide	150.00		
	Thaiyur, 1957	60.70	Uprootal	147.00	1[illegible],624.00	....
1974-75			Application of fertilizer and spraying of pesticide	60.00		
	Maiyur, 1959	10·12	Clearing uprootal and tractor ploughing	10·00		....
	Mambakkam, 1958	222·58	**Clearing and uprootal**	**127·00**	22,276·00	..
			Tractor ploughing	78·00		

Year of operation.	*Name and year of plantation.*	*Area in hectares.*	*Details of work done.*	***Area tended in hectares.***	*Expenditure incurred.*	***Remarks.***
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Sengundram, 1958	226·62	Clearing	75·50	13,445·00	....
			Uprootal	66·00		
			Tractor ploughing	47·00		
	Tirutheri, 1956	186·96	Clearing	172·00	28,839·00	....
			Uprootal	172·00		
			Tractor ploughing	171·00		
	Vandalur, 1958	189·39	Clearing and uprootal	22·00	2,900·00	....
			Tractor ploughing	15·00		
	Gudalur, 1958	203·15	Clearing and uprootal	90·00	10,395·00	....
			Tractor ploughing	60·00		
	Manali, 1959	217·72	Clearing and uprootal	160·00	23,360·00	....
			Tractor ploughing	100·00		
	Kattankolathur, 1958	208·01	Clearing and uprootal	138·00	27,201·00	....
			Tractor ploughing	115·00		
	Kattur, 1956	219·74	Clearing and uprootal	170·00	29,270·00	....
			Tractor ploughing	145·00		
	Thandalam, 1969	20·00	Clearing uprootal and tractor ploughing	20·00	4,888·00	....
	Maiyur, 1956, 1958 and 1959	56·26	Clearing and uprootal	56·00	5,462·00	....
			Tractor ploughing	22·00		
	Tirutheri, 1957	79·32	Clearing, uprootal and tractor ploughing	15·00	3,150·00	....
1975-76	Illalur 1956	212·46	Clearing and uprootal	200	32,790·00	....
			Ploughing	192·00		
	Kattur, 1957	205·98	Intensive maintenance (Clearing, uprootal, ploughing) and removal of thorns	129·00	26,880·00	....

Sonakr, 1959	214·08	Intensive maintenance Clearing and uprootal	70·00	15,406·00	....
		Ploughing	67·00		
Tirutheri, 1957	79·32	Intensive maintenance (Clearing, uprootal and ploughing)	60·00	13,201·05	....
		Heaping	52·00		
Gudalur, 1958	203·15	Ploughing of arrear area	81·00	9,787·00	..
		Intensive maintenance (Clearing uprootal and ploughing)	23·00		
Tirukalikundram, 1958	208·01	Ploughing of arrear area	74·00	10,200·00	.
Tirukalikundram, 1957	161·47	Ploughing of arrear area	45·00	5,880·00	...
Unamanjeri, 1959	129·09	Replacement of Casualities, application of fertilizer and spraying of pesticide.	28·33	11,404·00	....
Mailapore, 1956	209·22	Uprootal of stumps	20·23	7,125·00	Central package programme.
		Spraying of pesticides	101·17		
Tirutheri, 1956	186·96	Intensive maintenance (Clearing uprootal and ploughing)	80·94	30,280·00	Do.
		Plant protection measures	101·17		
Tirutheri, 1957	79·32	Clearing and uprootal	40·46	2,967·00	....
Mambakkam, 1957	174·26	Application of fertilizer	80·94	12,399·00	....
		Spraying of pesticide	20·23		
Mambakkam, 1958	222·58	Intensive maintenance except plant protection measures.	40·46	8,649·00	....
Vandalur, 1957	209·63	Intensive maintenance (Clearing, uprootal and ploughing).	41·28	13,700·00	....
Gudalur, 1956	267·09	Ploughing and Plant protection measures	101·17	7,323·00	....
Gudalur, 1957	210·44	Intensive maintenance (Clearing uprootal and ploughing).	64·75	29,292·00	Do.
Gudalur, 1958	203·15	Do.	101·17	44,730·00	Do.
Illanur, 1956	212·46	Plant protection measures	101·17	6,125·00	Do.
Illanur, 1957	211·65	Intensive maintenance	101·17	42,087·00	....
Illalur, 1957	211·65	Clearing and uprootal	20·23	2,820·00	....
		Ploughing	6·07		

Year of operation.	Name and year of plantation.	Area in hectares.	Details of work done.	Area rended in hectares.	Expemded incurred.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Tirukalikundram, 1958	208·01	Spraying of pesticisde	208·00	15,358·00	....
			Application of fertilizer	37·23		
	Tirukalikundram, 1957	161·47	Clearing and uprootal	158·64	6,280·00	....
			Floughing	16·19		....
1970–71	Kattankolathur 1961	10·11	Cultural operations	6·88	307·00	....
	Maiyur, 1958	10·12	Ploughing, application of fertilier and spraying of pesticide	10·12	423·00	....
	Mambakkam, 1957	174·26	Cultural opetations	72·84	7,789·00	....
	Tirutheri, 1957	79·32	Do.	79·32	19,878·00	....
	Vandalur, 1957	209·63	Do.	101·17	19,512·00	....
	Gudalur, 1956	267·09	Do.	215·29	25,447·75	....
	Madayathur, 1958	205·18	Intensine maintenance (Clearing, uprootal and ploughing)	202·34	13,883·00	....
	Kattur, 1956	219·74	Do.	182·11	25,211·00	....
	Kattur, 1957	205·98	Do.	101·17	20,670·00	....
	Kattur, 1959	195·87	Do.	171·99	41,524·00	....
	Illalur, 1956	212·46	Do.	161·87	37,443·00	....
	Illalur, 1957	211·65	Do.	109·27	7,690·00	....

1972–73 ..	Anjur, 1959	184·94	Uprootal	140·00	46,670·00	....
			Ploughing	132·40		
			Application of fertilizer and spraying of pesticide	150·00		
	Madayathur 1958	205·18	Plant protection measures	80·00	5,973·00	....
1973–74 ..	Mambakkam 1957	174·26	Clearing and uprootal	80·00	16,413·00	....
			Ploughing	70·00		
	Anjur 1959	184·94	Uprootal and ploughing	76·00	23,112·00	
			Spraying of pesticide	150·00		
	Anjur 1959	184·94	Clearing and uprootal	22·00	4,346·00	....
			Ploughing	17·00		
	Thaiyur 1957	60·70	Intensive maintenance			
			Uprootal	48·00	9,455·00	....
			Ploughing	33·00		
			Spraying of pesticide	60·00		
	Sirukundram 1959	57·46	Intensive maintenance (Clearing, uprootal and ploughing)	28·00	5,300·00	....
	Kattankolathur 1957	13·76	Do.	11·00	1,843·00	....
	Kattankolathur 1958	217·31	Do.	60·00	10,273·00	....
			Spraying of pesticide	200·00	11,839·00	....
	Alathur 1959	81·66	Intensive maintenance (Clearing, uprootal and ploughing)	74·00	13,893·00	....
	Illalur 1969	5·00	Do.	5·00	864·00	....
	Madayathur 1958	215·18	Do.	20·00	1,350·00	....
			Spraying of pesticide	20·00	2,052·00	....
	Palavakkam 1957	212·87	Clearing and uprootal	50·00	10,865·00	....
			Ploughing	45·00		
	Erumaivettipalayam 1960	142·85	Clearing and uprootal	5·00	640·00	....
	Sengundram 1958	226·62	Uprootal and plouging	116·00	30,030·00	
			Spraying of pesticide	150·00		

Year of operation.	Name and year of Plantation.	Area in hectares.	Details of work done.	Area tended in hectares.	Expenditure incurred.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1973–74	Kattur 1958	194.65	Uprootal and spraying of pesticide	180.00	39,973.00	....
			Ploughing	170.00		
			Application of fertilizer	10.00		
	Siruvanjur 1957	203.96	Uprootal	85.00	21,205.00	....
			Ploughing	58.00		
			Application of fertilizer	10.00		
			Spraying of pesticide	121.00		
	Irugulam 1956	202.34	Uprootal, ploughing and spraying of pesticide	108.00	23,375.00	....
	Illalur 1957	211.65	Spraying of pesticide	108.00	18,304.00	....
1974–75	Tirukalikundram 1958	208.01	Clearing and uprootal	208.00	29,596.00	....
			Tractor ploughing	102.00		
	Tirukalikundram 1957	161.47	Clearing and uprootal	160.00	20,208.00	....
			Tractor ploughing	78.00		

223. (iii) Selective pruning of the less vigorous branches was not carried out and reasons for not doing so have not been furnished.

224. (iv) As regards thinning it was prescribed that if thinning was required at a later date, say between the ages of 12 to 15 years, care should be taken to remove only poor yielders and the stocking of 80 trees per acre should be reduced to 50 in good plantations and 60 in moderately good plantations. No thinning programme was furnished. During the period of the working plan 11 plantations were thinned during 1972-73. The marked trees were removed through contractual agency. Details of the plantations thinned are furnished in the following statement :

List of Cashew plantations thinned from 1966-67 *to* 1975-76.

Year of thinning.	*Name and year of plantation.*	*Number of trees marked for felling.*	*Number of trees felled and removed.*	*Price fetched for the marked trees.*
(1)	(2)	(3)	(4)	(5)
				Rs. P.
1972-73 ..	Mailapore 1956	1,128	11,28	1,950·00
	Irugulam 1956	7,961	7,961	3,050·00
	Tirukalikundram 1957	702	702	800·00
	Tirukalikundram 1958	496	496	940·00
	Kattankolathur 1957	136	136	120·00
	Siruvanjur 1957	75	75	60·00
	Sengundram 1958	2,564	1,078	1,600·00
	Anjur 1959	738	479	725·00
1972-73 ..	Maiyur 1956, 1958 and 1959 ..	275	275	812·00
	Kattur 1957	1,191	1,191	900·00
	Kattur 1958	349	349	610·00

225. In addition, a certain amount of soil conservation measures prescribed under the Soil Conservation Working Circle were carried out as part of the cultural operations under this working circle. Details of the same have been given in the statement furnished in paragraph 222.

226. The raising of new plantations of the species was prescribed in a general way and the selection of the annual area in each series was left to the discretion of the District Forest Officer. An extent of 983·47 ha. was thus planted up between 1966 and 1975. The details of the plantations raised are furnished in the subjoined statement. As only marginal lands were available for planting, the good areas having been planted up earlier, some of the plantations failed. The technique followed in raising the plantations consisted in clearfelling and uprootal of the existing growth, burning ploughing and dibbling in 30 cm. cube saucer pits

List of Cashew Plantatons ***raised between*** 1966 and 1975.

Year of planting. (1)	*Name of series* (2)	*Name of R.F/R.L.* (3)	*Espacemet in metres.* (4)	*Extent in hectares.* (5)	*Remarks* (6)
1966	**Guduvancher**	Gudalur	10·05 X 10·05	21·04	Failure.
1969	Sembakkam	Illalur	1·83 X 1·83	5·00	....
	....	Thandalam	5·03 X 5·03	20·00	Not included in any series.
1970		Kondamanallur	5·00 X 5·00	20·00	Not included in any series Failure.
1971	....	Kolathur	Do.	40·00	Not included in any series.
	Karumbskkam	Anjur	Do.	24·00	Failure.
		Vallam Bits I and II	Do.	20·23	Failure. Not included in any Series.
	Thirukalikundram	Salur	Do.	16·00	
	....	Perungoli	Do.	35·00	Do.
	....	Marudam	Do.	21·20	Do.
	....	Thirumani	Do.	16·00	Not included in any series.
	Karumbakkam	Nemmeli	Do.	28·00	Formerly 1960 failed plantation.
1972	....	Pulikundram	5 X 5	20·00	Not included in any series.
	....	Pudupair	Do.	50·00	Do.
	Kattupakkam	Manganiam	Do.	37·20	....
	Guduvanchery	Gudalur	Do.	41·70	...
	....	Nanmangalam	Do.	44·80	Not included in any series.
	....	Kolathur	5·03 X 5·03	49·00	Do.
	....	Vallam Bits I and II	Do.	19·40	Failure. Not included in any series
	Karumbakkam	Anjur	Do.	16·00	Failure.
	....	Perungoil	Do.	47·00	Not included in any series.
	....	Marudam	Do.	41·40	Do.
	....	Paranur	Do.	6·90	Do.

	Tirukalikundram	Tirukalikundram	Do.	12·10	....
	Do.	Salur	Do.	2·40	....
	Karumbakkam	Nemmeli	Do.	31·80	Formerly 1960 failed plantation.
1973	....	Pulikundram	5 X 5	43·30	Not included in any series.
	....	Senjiagaram	Do.	10·00	Do.
	....	Nanmangalam	Do.	30·00	Do.
	Kovalam	Mambakkam	Do.	20·00	....
1974	....	Vengal	Do.	4·00	Not included in any series.
	....	Pulikundram	Do.	25·50	Do.
	....	Malandur	Do.	3·60	Do.
					Do.
	....				
	....	Senjiagaram	Do.	4·00	Do.
	....	Perungoli	Do.	47·70	Do.
	....	Thirumani	Do	14·20	Do.
1975	....	Sengiagaram	Do	7·00	Do.
	....	Vembedu	Do	23·00	Do.
	....	Pulikundram	Do	25·00	Do.
	....	Koliyalam	Do	40·00	Do

227. During 1973 steps were taken by the District Forest Officer to select pedigree trees in well developed plantations for collection of seed for propogation work in future. A pedigree tree was defined as one that yielded a minimum of 5 kilograms of raw nuts. A statement showing the names of the plantations in which such trees were selected and the number of trees so selected is furnished below :—

Name of Range. (1)	*Name and year of plantation.* (2)	*Number of trees selected.* (3)
Tiruvallur	Mallapore 1956	15
	Illalur 1957	30
Kelambakkam	Mambakkam 1956	8
	Mambakkam 1957	10
	Mambakkam 1958	12
	Sengundram 1958	10
	Anjur 1959	10

The serial number of the tree and a plus mark have been painted on the trees to identify them.

228. During 1972–73 experiments were carried out by the District Forest Officer on manuring and spraying of Planofix with a view to establishing whether these measures would increase the yield of raw nuts. The experiments showed that the results were not commensurate with the expenditure incurred and that clearing and uprootal of rank growth followed by ploughing was sufficient to increase yields.

229. The exploitation of Cashew usufructs was prescribed to be dealt with under the Minor Forest Prodce Working Circle.

230. *The Eucalyptus Working Circle.*—The object of management was to raise a quick growing species to augment firewood supplies in the state and especially to Madras City while at the same time converting valueless scrub into productive fuel forests through artificial regeneration. The working circle was made up of 1,732·73 ha. of Eucalyptus tereticornis plantations existing at the time and 3,711·00 ha. of new area proposed to be planted mainly with the same species. No series were formed. Instead the areas to be planted were grouped range-war namely, Chingleput, Madurantakam, Tiruporur, Tambaram and Tiruvallur. The Silvicultural system prescribed was the simple coppice system. The areas to be planted were divided into four categories depending chiefly on the prevailing edaphic conditions and a separate regeneration techniques was prescribed for each category. The categorisation, which was an exercise in futility because it was never observed, was as follows:

Category. (1)	*Regeneration technique.* (2)
A. Areas with good soil but broken terrain where mechanical aids cannot be used.	Concentrated.
B. Areas with poor soil	Concentrated with application of fertilizer
C. Areas with weathered and rich top soil	Method of steppique.
D. Areas with varied soil	Mixed planting of Eucalyptus and miscellaneous species.

The basic regeneration techniques that was prescribed consisted of clearfelling, uprootal, tractor ploughing and artificial regeneration with 3 to 6 months old (30 cm. to 40 cm. tall) nursery raised container plants in 30 cm cube pits spaced at 2·50 m. X 2·50 m. and was followed except with slight variations in espacement from time to time. The rotation was fixed at 10 years but was altered to 8 years by the Chief Conservator of Forests in August 1973. The area planted between 1966 and 1975 was 2,721·86 hectares and the area clearfelled during the same period was 2,318·36 ha. The plantations raised were generally successful considering the adverse ecological and biotic factors obtaining in the tract. A list of the plantations raised is furnished in the subjointed statement.

231. While prescribing the raising of Eucalypt plantations it was laid down that miscellaneous species such as Neem, Babul, Lannea grandis and Albizzia amara would be raised in portions of the plantations not suited to Eucalptus tereticornis. This prescription was however, implemented in a different form i.e., sparate plantations of miscellaneous species were raised. The species use were mainly Lannea grandis, Cassia siamea, Acacia arabica, A. planifrons and A. auriculiformis. The total area planted up was 281·36 hectares. Aslam also advocated the introduction of the exotics, Eucalyptus alba, E. Papuana, E. gomphocephela and E. cleoziana, but this suggestion was not implemented. Instead Eucalyptus camaldulensis was introduced in 1973 at the instance of the Chief Conservator of Forests and this dealt with later on. As regards the plantations raised it deserves mention that generally the results have been satisfactory considering the low quality of the sites on which they have been raised. Assuming that sites with Saline alkali soils are left alone and the prescribed techniques has been followed the important factors determining success are timely operations and rigid protection and where these twin objectives hav been achieved the results have been satisfactory. All the species tried have fared well as is only to be expected except for the exotic, Acacia auriculiformis. While the stocking in the case of this species is satisfactory its rate of growth is poor. It is evident that it should be tried on soils of higher status including better drainage. A statement containing details of the plantations raised is furnished below:—

LIST OF EUCALYPT PLANTATIONS RAISED BETWEEN 1966 AND 1975.

Year of Planting. (1)	*Name of R.F./R.L.* (2)	*Espacement in metres.* (3)	*Extent in hectares.* (4)	*Name of Range.* (5)
1966	Nemalur	1·83 X 1·83	22·26	Tiruvallur.
	Mailapore	2·59 X 2·59	29·95	Do.
	Palavakkam	Do.	21·45	Do.
	Siruvada	Do.	20·64	Do.
	Vadakkupattu	1·83 X 1·83	19·02	Tambaram.
	Vattampakkam	Do.	40·47	Do.
	Maduraipakkam	Do.	40·47	Do.
	Vandalur Bit I	Do.	17·00	Do.
	Vadalur Bit II	Do.	2·83	Do.
	Sengundram	Do.	23·07	Kelambakkam.
	Mambakkam	Do.	19·83	Do.
	Kolathur	Do.	20·23	Do.
	Appur Bit I	Do.	14·16	Chingleput.
	Appur Bit II	Do.	25·50	Do.
	Salur	Do.	30·35	Do.
	Thottacheri	Do.	17·40	Madurantakam
	Rajapalayam	Do.	40·47	Do.
	Kattur Bit I	Do.	10·12	Do.
	Kattur Bit II	Do.	25·50	Do.
	Thandalam	Do.	39·66	Do.

Year of planting. (1)	*Name of R.F./R.L.* (2)	*Espacement in metres.* (3)	*Extent in hectares.* (4)	*Name of Range.* (5)
1967	Nemalur	1·83 × 1·83	26·71	Tiruvallur.
	Siruvada	Do.	16·19	Do.
	Vengal	Do.	38·32	Do.
	Mailapore	Do.	30·32	Do.
	Palavakkam	Do.	21·04	Do.
	Vattambakkam	Do.	20·03	Tambaram.
	Vedakkupattu	2 × 2½	14·32	Do.
	Nanmangalam	Do.	13·82	Do.
	Maduraippakkam	3·35 × 3·35	41·20	Do.
	Gudalur	Do.	33·67	Do.
	Sengundram	1·83 × 1·83	15·38	Kelambakkam.
	Kolathur	Do.	37·88	Do.
	Appur, Bit I	Do.	23·39	Chingleput.
	Appur, Bit II	Do.	22·13	Do.
	Thirumani	Do.	11·27	Do.
	Salur	Do.	37·15	Do.
	Kattugudalur	Do.	20·23	Madurantakam.
	Gudalur	Do.	51·31	Do.
	Illalur	Do.	18·48	Do.
	Kattur	Do.	24·36	Do.
	Navalur	Do.	24·28	Do.
1968	Nemalur	Do.	25·98	Thiruvallur.
	Siruvada	Do.	16·35	Do.
	Palavakkam	Do.	63·41	Do.
	Vengal	Do.	56·12	Do.
	Maduraipakkam	Do.	10·93	Tambaram.
	Vattambakkam	Do.	17·64	Do.
	Vadakkupattu	Do.	15·05	Do.
	Anjur	Do.	26·33	Kelambakkam.
	Kolathur	Do.	40·96	Do
	Kavanipakkam	Do.	36·26	Chingleput.
	Appur	Do.	36·10	Do.
	Rajapalayam	Do.	28·00	Madurantakam.
	Thottacheri	Do.	58·62	Do.
	Kattur	Do.	27·11	Do.
	Oragadam	Do.	28·41	Do.
	Alathur, Bit I	Do.	85·47	Do.
	Alathur, Bit II	183 × 1·83	5·67	Do.
1969	Vattambakkam	Do.	18·16	Tambaram.
	Maduraipakkam	Do.	6·80	Do.
	Kolathur	Do.	42·80	Kelambakkam.
	Anjur	Do.	21·60	Do.

Year of Planning. (1)	*Name of R.F./R.L.* (2)	*Espacement in metres.* (3)	*Extent in hectares.* (4)	*Name of Range* (5)
1969	Vallam	1·83 × 1·83	18·16	Kelambakkam.
	Kavanipakkam	Do	29·00	Chingleput.
	Appur	Do.	30·00	Do.
	Acharapakkam	Do.	4·04	Madurantakam.
	Gudalur	Do.	2·80	Do.
	Illalur	Do.	22·60	Do.
	Oragadam	Do.	25·62	Do
1970	Vattambakkam	Do.	20·00	Tambaram.
	Kolathur	Do.	42·80	Kelambakkam.
	Anjur	Do.	21·60	Do.
	Vallam	Do.	20·00	Do.
	Salur (Bits I and II)	Do.	20·00	Chingleput.
	Appur	Do.	30·00	Do.
	Acharapakkam	Do.	40·00	Madurantakam.
1971	Vattambakkam	Do.	18·00	Tambaram.
	Appur	Do.	25·86	Chingleput.
	Acharapakkam	Do.	20·00	Madurantakam.
1972	Pulikuradu	Do.	18·20	Tambaram.
	Vattambakkam	Do.	18·00	Do.
	Gudalaur	Do.	4·00	Do.
	Sirukundram	Do.	35·30	Kelambakkam.
	Appur	Do.	37·76	Chingleput.
	Kattankolathur	Do.	12·10	Do.
	Hanumanthaputheri	Do.	8·50	Do.
	Paranur	Do.	8·00	Do.
	Acharapakkam	Do.	20·10	Madurantakam.
	Rajapalayam	Do.	25.55	Do.
	Alathur	Do.	4·50	Do.
	Oragadam	Do.	28·90	Do.
	Navalur (Bits I and II)	Do.	20·61	Do.
1973	Peddapullur	Do.	35·00	Tiruvallur.
	Vattambakkam	Do.	17·40	Tambaram.
	Paranur	Do.	4·60	Chingleput.
	Appur	Do.	20·00	Do.
	Oragada	Do.	34·30	Madurantakam.
	Nemmeli	Do.	56·00	Do,
1974	Peddapullur	Do.	35·00	Tiruvallur.
	Vattambakkam	Do.	24·00	Tambaram.
	Appur	Do.	33·10	Chingleput.
	Nemmeli	Do.	32·40	Madurantakam.
	Gudalur 'B'	Do.	31·20	Do.

232. *Economics of Eucalyptus plantations.*—While by local standards the plantations would be considered satisfactory by normal standards they are at best extremely patchy. Initial ctsualities are high, being about 70 percent as disclosed by enumerations made by the Working Plan staff. Besides, stagnation sets in due to the aridity and low soil status of the tract after an initial spurt of growth in the first three to four years. The cumulative effect of these factors is that yields are low and uneconomical. The yield from exploited plantations has been 3.20 tonnes (Debarked) for hectare on an average and at the subsidised royalty of Rs. 40.00 per tonne of debarked wood being currently paid by the Paper Mill the revenue per hectare works out to Rs. 128.00. In addition about Rs. 12.00 per hectare is obtained by the sale of bark and top-ends. As against this the cost of only fuel wood species in the division that has produced quick and tanjible results and being a good no expenditure would be required on it atleast during the second rotation. Further, in view of the fact that it has industrial potentialities its value cannot be assessed merely in monetary terms. In the final analysis it has to be stated that till an industrial-wood yielding species with a higher outturn suited to the division is found the raising of Eucalypts on available site will have to be continued.

233. During field inspection in 1971, the Chief Conservator of Forests instructed that all regeneration areas should be ploughed before planting with a view to improving the rate of growth.

234. Based on the proceedings of the Forest Officers conference held at Ootacamund on 18th October 1973, the Chief Conservation of Forests issued orders in his reference C. No. 16171|72 LI, dated 1st November 1973 to take up trial planting of Eucalypt at a closer espacement of 1.5 m. x 1.5 m. with a view to studying the growth rate in relation to plantations raised at the usual espacement of 2 m. x 2 m. The orders were implemented in the following plantations :—

Vattambakkam	1974—19 ha.	—	1000 spots.
Appur	1974—25 ha.	—	1000 spots.

235. Introduction of Eucalyptus camaldulensis—Under instructions Chief Conservator of Forests in January 1973 Eucalyptus camaldulensis, a fast grown Eucalypt suited to arid tracts, was introduced in the division from 1973 to 1975, both years inclusive. The required seed was obtained from time to time from the Central Arid Zone Research Institute, Jodhpur and a sample of the seed which was tested by the Forest Geneticist in January 1975 gave the following results :—

Purity before cleaning — 19.5 per cent.
Purity after cleaning — 68 per cent.
Seed weight — 3095 seed per gram.
Germination test:
  Date of commencement of test — 29-1-75.
  Date of first observation — 4-2-1975.
  Date of last observation — 10-2-1975.
  Germination medium — Paper medium.
  Germination — 87 per cent.
  moisture content — 11 per cent on 13-2-1975 by OSAW universal moisture meter.
  Plant per cent — 15 on 14-2-1975.

236. Details of the trial plantations raised are tabulated below :

Year planting	*Name of plantation.*	*Espacement in metres.*	*Area planted in hectares.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
1973	Vattambakkam	2×2	10	Out of a total area of 20ha.
1974	Nemmeli	2×2	30·80	
1974	Vattambakkam	2×2	21·90	
1975	Appur	2×2	33·10	
1975	Nemmeli	2×2	32·40	
1975	Vattambakkam	2×2	24·00	

The plantations have fared well in the initial stages and their subsequent development and outturn will have to be watched because according to the findings of the State Silviculturist the yield of wood of the species is slightly less than that of Eucalyptus tereticornis.

237. *The Fuel Working Circle.*—The Fuel Working Circle was comprised of two series, namely Krishnareddikona and Nakkalakona. Both were located in Allikuli R.F. of Tiruvallur Range. The rotation was fixed at 30 years. The series functioned upto 1973-74 and were then wound up by the Chief Conservator of Forests for a period of ten years in his ref. No. 1885|74 K4, dated 16th January 1975 as reproduction did not keep pace with removals. The average outturn from these series was about 11 tonnes per hectare. The prices fetched for the coupes worked are furnished in paragraph 151 supra whereas the yield is furnished in paragraph 269 infra.

238. *The Minor Forest Produce Working Circle.*—This Working Circle was constituted to regulate the exploitation of minor forest produce including Cashew usufructs and granite in the division. Seventeen items other than granite were listed as minor forest produce and the Range was the unit of sale but for Cashew usufructs the plantation and for granite the quarry was the unit of sale. The lease period for minor forest produce was the fasli year from 1st July to 30th June, while for Cashew it was from 1st March to 30th June of the same year. For stone quarries the lease period was for one fasli year from 1st July to 30th June but this was increased to two years in G.O. Ms. No. 3299, Agriculture Department, dated 7th November 1968. During 1970-71, the representatives of the Quarrying Lessees Association, Tambaram requested the Government to fix the lease period of some quarry lease units in Tambaram and Pulikuradu R.F's at five years. On considering the request the Government in its Memo. No. 112171|DV|71—8, Agriculture, dated 19th May 1971, fixed the lease period for these lease units at three years. In the same order of the Government ordered the Chief Conservator of Forests to review the position after two years and submit a report on the working of the scheme which the Chief Conservator of Forests did in June 72. The Chief Conservator of Forests recommended fixation of the lease period at two years as it was working well and was financially advantageous to Government whereupon the Government in the Memo. No. 78611|DV|71-8, Agriculture, dated 20th November 1972 fixed the lease period for stone quarries sold in auction in all forest divisions at two years. The number of stone quarries at the commencement of Aslams plan was 76 and at its end 140. It hardly needs emphasising that the extensive quarrying in the division has had an irreparably devastating effect on forest conservation in the division and that any future policy should aim at containing this evil.

239. As regards Cashew usufructs a complete switch over to exploitation through departmentmental agency was done in 1971 as it was found to be more profitable. The raw nuts that were collected were sold in public auction. The average prices fetched per kilogram were as follows :—

1971 ...	Rs. 1.83
1972 ...	Rs. 1.91
1973 ...	Rs. 3.19
1974 ...	Rs. 4.26
1975 ...	Rs. 3.00

240. The demand for other minor forest produce was negligible and was confined only to Palmyrah leaves.

241. During 1972 and 1975, the following five trial plantations of Tamarind and Divi-Divi were raised outside the prescriptions of the working plan. The Tamarind plantations are generally, failures :

Name of plantation.	*Area in hectares.*	*Expenditure.*	*Remarks.*
(1)	(2)	(3)	(4)
Valluvapakkam	2·00	Rs. 515·00	Tamarind.
Kattur	2·00	Rs. 519·00	Tamarind
Sirukundram	2·00	Rs. 639·00	Tamarind.
Anjur	2·00	Rs. 931·00	Tamarind. Cashew has also been raised in quincunx.
Vembedu	2·00	Rs. 1,350·00	Divi-Divi.

242. *The Grazing Working Circle.*—The main object of management was to provide adequate pasture for cattle at nominal rates. The Grazing Working Circle extended over the entire division. It postulated that the area in Vandalur Reserved Forest of Tambartm Range handed over to the State Silviculturist was to be permanently closed to grazing all fuel coupes and plantations were to be closed for a period of six years inclusive of the year of felling and formation respectively and that areas were experiments were being conducted were to be closed for a period of ten years. It also laid down that the District Forest Officer may close areas wilfully burnt by villagers as per the provisions of the Madras Forest Manual.

243. In 1968, the Chief Conservator of Forests, Madras clarified in his reference R.Dis. 50794|68, dated 4th November 1968 that a permit issued in a division would be valid for the whole state.

244. In G.O. Ms. No. 17, Agriculture, dated 2nd January 1971, the Government ordered doubling of the grazing fee to Rs. 1.00 per cow unit with effect from 18th July 1971. The conservator conference had recommended the above enhancement which was also endorsed by the Forest Advisory Board. The increase in the price level and cost of organisation of the Forest Department were given as the reasons for the increase.

245. *The Soil Conservation Working Circle.*—The object of management of this working circle was to conserve soil and moisture in all Cashew and Eucalypt plantations by implementing soil conservation measures as the plantations had been raised on degraded sites. It was thus an overlapping working circle. The works prescribed were contour bounding and check-dam construction. The areas to be tackled were listed out range-war. The prescriptions were implemented only in some Cashew plantations by way of cultural operations under the Cashew Working Circle when in 1968-69 the ryots objected to the formation of contour bunds as they impeded the surface flow of rain water into their irrigation tanks. The territorial Conservator, therefore, ordered stoppage of further work in his reference No. 27244|68 A1, dated 28th September 1969.

246. *Miscellaneous regulations.*—Miscellaneous regulations were made under the following heads :

1. Fire protection.
2. Proper demarcation, rectification of boundaries and eviction of encroachments.
3. Buildings.
4. Roads.

5. Miscellaneous—
   (i) Teak plantations.
   (ii) Red Sanders.
   (iii) Casuarina.
   (iv) Other items.
   (v) Farm Forestry.
   (vi) (*a*) Guindy Park.
      (*b*) Vedanthangal Birds' Sanctutry.
      (*c*) Protection of Taiyur R.F.
      (*d*) Park in Hanumanthaputheri R.F.

247. *Five Protection.*—The fire protection measures prescribed were maintenance of the inter-state boundary in Tiruvallur Range and clearance of Jeep tracks, inspection paths and 20 hectare block lines in Cashew plantations. Of these the clearance of the inter-state boundary was done in 1969-70. Regarding the second item of work their clearance was automatically achieved when the plantations were tractor ploughed by way of cultural operations and no expenditure was specifically incurred on this work but in plantations where such work was not done the prescriptions stood unimplemented.

248. *Proper demarcation, rectification of boundaries and eviction of encroachments.*—The working Plan party verified the boundaries of the Reserved Forests in the division and listed out the fallen ctirns that required to be replanted and the missing cairns that required to be replaced. The total of such cairns was 128 and 453 respectively. As against this only 94 fallen cairns were replanted and 96 missing cairns were replaced between 1969-70 and 1971-72 as shown in the sub-joined statement. No reasons are forthcoming for stoppage of the work thereafter.

STATEMENT OF RECTIFICATION OF BOUNDARY DEFECTS.

Year of Work (1)	*Name of R.F./R.L.* (2)	*Number of fallen cairns replanted.* (3)	*Number of missing cairns replaced.* (4)	*Remarks.* (5)
1969–70	Acharapakkam		Nil.	18
	Paranur		Nil.	35
	Marudam		Nil.	1
	Hanumanthaputheri		Nil.	25
	Tirukalikundram		Nil.	40
	Thirumani		Nil.	1
	Salur		Nil.	18
	Kattankolathur		Nil.	4
	Perungoli		Nil.	1
	Kavanipakkam		Nil.	9
	Appur		Nil,	12
	Edamachi		Nil.	11
1970–71	Edamachi		11	Nil.
	Kavaripakkam		9	Nil.
	Perungoli		1	Nil.
	Tirukalikundram		40	Nil.
	Salur		18	Nil.
	Mailapore		4	2
	Kattur		Nil.	12
	Navalur		Nil	3
	Maduyathur		Nil.	1
	Illalur		Nil.	1
	Palayakkam		6	Nil.
	Manali		5	
Total			94	196

Regarding eviction of encroachments, one encroachment in Nayapakkam R.F. by the Poondi Reservoir between cairns No. 45 and 56 by the Public Works Department was shown as requiring eviction. Demarcation of Pullarambakkam R.F. with cairns was also prescribed to be carried out. Neither of the works was carried out.

249. The inter-state boundary with Andhra Pradesh in Allikuli R.F. and Pullikundram R.F. was prescribed to be cleared and this was done in 1969-70.

250. *Buildings.*—Construction of twenty four buildings at a cost of Rs. 2,48,000.00 was prescribed as against which nineteen buildings at a cost of Rs. 2,90,107.67 were constructed. Two important buildings, namely a residence and office for the District Forest Officer which were prescribed to be constructed in Guindy Park R.F. were not constructed due to paucity of funds. A list of the buildings constructed is furnished in the next section.

251. *Roads.*—The only forest road was the 11.26 km. long Allikuli — Ramancheri road and it was prescribed to be maintained. This road was once the only means of communication from Allikuli R.F. but when the bus route from Tiruvallur to Placepalayam via Seethanchery and Allikuli was developed subsequently the fuel coupe contractors used only the new route and the forest road fell into disuse. It was, therefore, not maintained. The maintenance of jeep tracks and inspection paths in the Cashew plantations was also prescribed to be done. This was done at the time of carrying out cultural operations and harvesting of usufructs without specially incurring any expenditure for the purpose.

252. *Miscellaneous.*—(i) *Teak plantations.*—The Teak Plantations that had been raised between 1956 and 1959 in the division over an extent of 20.04 ha. were prescribed to be maintained through tending. In addition a mechanical cum silvicultural thinning in the 1955 Maiyur plantation (0.40 ha.) so as to reduce the existing stocking of 297 trees per acre to 150 was prescribed to be carried out during the mid-currency of the plan but it was not done on the plea that the plantation was not ripe for thinning. Neither was any tending done in the other plantations.

253. (ii) *Red Sanders plantations.*—Upto the commencement of the plan an area of 91.45 ha. had been planted up with Red Sanders in various localities with results ranging from successful to complete failure. Aslam, who sampled some of the plantations, concluded that the survival percentage was anything from 60 to 90 and that the oldest plantation (Presumably Mailapore 1958) had an average height of 8 metres and girth of 60 cm. He did not propose any tending or thinning of the plantations but proposed continuance of planting over an extent of 188.60 ha. in Mailapore, Siruvada and Palavakkam R.F's and Vengal R.L. between 1966 and 1975. The planting technique, though not specified, consisted in the main in planting out nursery raised container plants in 30 centimetre cube pits at the onset

of the north-east monsoon after clearing and uprootal of existing jungle growth As against the targetted area an extent of 727.63 hectares was planted up during the period of the Plan as follows :

LIST OF REDSANDERS PLANTATIONS RAISED BETWEEN 1966 AND 1975.

Year of Planting. (1)	Name of R.F./R.L. (2)	Espacement in metres. (3)	Area in hectares. (4)	Remarks. (5)
1966 ..	Mailapore	2·59 × 2·59	9·71	....
	Siruvada	Do.	9·31	....
1967 ..	Mailapore	Do.	8·66	....
	Siruvada	Do.	9·31	....
1968 ..	Siruvada	Do.	9·87	....
	Vengal	Do.	4·21	....
	Mailapore	Do.	10·22	....
1969 ..	Nemalur	3·00 × 3·00	25·50	....
	Mailapore	Do.	11·25	....
	Siruvada	Do.	20·80	....
	Palavakkam	Do.	8·40	About 100 saplings are surviving.
	Vengal	Do.	30·76	....
1970 ..	Mailapore	Do.	10·93	....
	Pullarampakkam	Do.	20·00	....
	Palavakkam	Do.	18·00	About 500 plants are surviving.
	Nemalur	Do.	25·00	....
	Vengal	Do.	8·75	....
	Malandur	Do.	11·75	....
1971 ..	Mailapore	Do.	10·00	....
	Nemalur	Do.	25·00	....
	Palavakkam	Do.	19·00	Failure.
	Vengal	Do.	21·20	....
	Malandur	Do.	16·00	....
1972 ..	Mailapore	Do.	12·00	....
	Malandur	Do.	17·80	....
	Vengal	Do.	21·40	....
	Palavakkam	Do.	16·00	About 500 plants in surviving.
	Nemalur	Do.	10·00	....
1973 ..	Nemalur	Do.	27·00	....
	Mailapore	Do.	10·00	....
	Pullarambakkam	Do.	12·00	Failure due to cattle damage.
	Palavakkam	Do.	18·00	....
	Vengal	Do.	21·40	....
	Malandur	Do.	26·00	....
1974 ..	Nemalur	Do.	27·10	....
	Vengal	Do.	15·80	....
	Irugulam	Do.	8·50	....

Year of Planting. (1)	*Name of R.F./R.L.* (2)	*Espacement in metres.* (3)	*Area in hectares.* (4)	*Remarks.* (5)
1975 ..	Nemalur	3·00 × 3·00	24·70	....
	Mailapore	Do.	29·10	....
	Palavakkam	Do.	50·20	....
	Vengal ..	Do.	32·00	....
	Tiruttani (Koramangalam R.L.) ..	Do.	5·00	....
	Pudupair	1 × 1	1·00	This was a raised as a miscellaneous plantation in which 500 spots were regenerated with Red Sanders. The entire plantation failed due to submersion.

254. (iii) *Casuarina*—In order to encourage the cultivation of inland Casuarina it was prescribed to plant up annually an extent of 2·40 ha. in Maiyur R.L. on the banks of the Palar in Madurantakam Range between 1966 and 1975 as an experimental measure duly adopting the technique of clear felling, ploughing and watering during the first year. In 1966 an extent of 8·60 ha. (21 acres) was planted and the plantation was maintained in the following year. Despite the care taken the plantation failed due to drought and fail in water table of the Palar during summer. Planting of the species was, therefore, discontinued from 1967 but revived in 1972. This was approved by the Chief Conservator of Forests in his reference D. Dis. 21564/73 L1. dated 7th February 1974. A technique styled as the Dry Technique was adopted for raising the plantation from 1972 onwards. It consisted in clearing and uprootal of all growth, tractor ploughing wise (Disc ploughing), containerless transplanting in crowbar holes during the rains with beatingup upto January and a lightsoil-working at the end of north-east monsoon when the soil had become hard. The espacement adopted was 1 metre x 1 metre and the cost worked out to Rs. 407·30 per hectare. During the period of Aslams plan an extent of 243.40 hectares was planted with the species but curiously enough while the species has been raised successfully on private lands the results on forest areas have been extremely patchy. This is due to untimely operations, planting on elevated sites, cattle damage and existence of competing rank growth.

255. The 1966 Maiyur (5·00 ha.) and 1972 Sengundram (8·20 ha.) plantations which were killed by drought were sold for Rs. 517·00 and Rs. 1,830·00 respectively in January 1976.

256. A statement showing the plantations raised between 1966 and 1975 is furnished in the subjoined statement :

LIST OF CASUARINA PLANTATIONS RAISED BETWEEN 1966 AND 1975.

Year of planting. (1)	*Name of R.F./R.L.* (2)	*Espacement in metres.* (3)	*Extent in hectares.* (4)	*Remarks.* (5)
1966 ..	Maiyur	1·83×1·83	8·50	Killed by drought and sold in January 1976.
1972 ..	Irugulam	1×1	8·00	
	Mannur	Do.	8·90	
	Sengundram	Do.	8·20	Killed by drought and sold in January 1976.
	Kolathur	Do.	2·00	
	Kattankolathur	Do.	3·00	
	Tirukalikundram	Do.	4·00	
	Salur	Do.	10·90	
	Gudalur 'B'	Do.	8·00	

1973	Vengal	Do.	6. 90
	Mannur	Do.	10. 00
	Sengundram	Do.	8. 00
	Kolathur	Do.	9. 00
	Gudalur 'B'	Do.	9. 60
1974	Mannur	Do.	50. 00
	Sengundram	Do.	7. 10
	Kolathur	Do.	20. 60
1974	Paranur	IXI	2. 80
	Appur	Do.	2. 80
	Gudalur 'B'	Do.	2. 00
1975	Mannur	Do.	32. 00
	Kolathur	Do.	21. 10

257. (iv) *Other items.*—This pertainted to the supply of mechanical equipment such as pump sets, sprinklers, a tractor and a lorry. With a view to modernising the nursery techniques a sprinkler with a 12 horse power pumpset and costing Rs. 11, 903.00 in all was installed at the Kattankulathur Nursery in Chingleput Range in 1961. The sprinkler equipment which cost Rs. 6,403.00 with a pumpset cost Rs. 3, 587.50 at the Salur Grass Plot was transferred to the Rubber Plantations Nagercoil in 1968 as per the orders of the Chief Conservator of Forest in his proceedings Rt. 1888/68, dated 26th July 1968. Then again in 1969 a pumpset costing Rs. 1, 900.12 and purchased in 1963 was transferred to the Mettur Soil Conservation Division, Salem as per the orders of the Chief Conservator of Forests in his reference No. 8609-69 H3 (Date not available). A jeep purchased in 1959 at a cost of Rs. 13,122.39 was condemned in 1970. A list of mechanical equipment purchased in the division during the period of Aslam plan is furnished in the sub-joined statement.

LIST OF MECHANICAL EQUIPMENT AND VEHICLES PURCHASED FROM 1966-67 and 1975-76.

Year of purchase. (1)	*Description.* (2)	*Cost.* (3) Rs. p.
1966	Willys jeep with trailer	18,636.94
1967	Allis Chailmer crawler tractor	1,18,258.27
1968	Escort 37 tractor	18,600.00
1968	Escort 37 tractor	18,600.00
1968	½ H.P.A.C. pumpset	575.00
1970	Crawler tractor Model TD-6	65,900.00
1973	Willys Universal jeep	22,335.19

258. (v) *Farm Forestry.*—At the commencement of Aslams plan the extent under Farm Forests was 3,248.60 hectares. He prescribed continuance of planting under this Five-year Plan scheme and furnished a list of areas available for planting The species prescribed for planting depending on site suitability were Babul, Neem, Cashew, Tamarind. Eucalypt, Palmyra, Acaciaferruginea and Bassia latifolia. The espacement prescribed was 3.50 metres x 3.50 metres. He also

prescribed closure of platantion to grazing during the first six years. Regarding exploitation of the plantations he fixed a roation of 10 years for Eucalypt and Casuarina while for Babu he opined and rightly so, that the plantations would not come up for exploitation during the period of his plan. The rotation for Eucalypt was subsequently reduced to 8 years by the Chief Conservator of Forests in August 1973. For Cashew he prescribed departmental harvesting of the usufructs from the 6th year onwards. The areas planted up during Aslams plan was 2,981.73 hectares whereas the area clearfelled was 1,9[illegible]8.50 hectares and revenve realised Rs. 4,47,995.55. Of this a sum of Rs.1,90,508.00 was distributed to the Panchayats as being their share of the revenue as per G.O. Ms. No. 117, Agriculture, dated 12th January 1971.

259. A list of Farm Forestry plantations in the division raised from the inception of the scheme up to and inclusive of 1975 is furnished in Appendix IX.

260. (vi) (a) Guindy Park—A description to the Childrens Corner in the park was furnished. As the park was under the control of the Wild Life Officer, Madras and not the District Forest Officer, Chingleput the question of marking any prescriptions did not arise.

261. (vi) (*b*) Vedanthangal Birds' Sanctuary—Aslam observed that the grove of barringtonia acutang lattrees was all important, that there were 557 trees of about 4.57 metres (15 feet) height and about two centuries old in 1960, that though not a Mangrove, the species could stand seasonal water logging fairly well. He, therefore, suggested that their incidence be increased. In 1974 the realisation dawned that the number of birds in the sanctuary was steadily dwindling over the years due to a decrease in the number of Barringtonia acutangula trees caused by cyclones and other causes. The Chief Conservator of Forests, therefore, ordered the District Forest Officer to take entire tree transplanting of the species in the tank bed with a view to increase its stocking. Consequently 104 trees of the species lifted from Neer P[illegible]yar, Karikali, Viluthamangalam and Poongunam tanks were transplanted in the sanctuary in 1·83 m.x. 1.83 m. x. 1.22 m. (6‘ x6‘x4,) pits at a cost of Rs· 43,015.00 during August and September 1974, As of date 99 of the transplanted trees are surving. The expenditure was met from the wild life budget.

262. (vi) (*c*) Protection of Taiyur *R.F.*—Production of the black buck and spotted deer introduceed in 1978 in Taiyur R. F. was prescribed. This was afforded by the protective staff at no extra cost.

263. (vi) (*d*) Park in Hanumanthaputheri R.F.—As extent of 5 hectares in Hanumanthaputheri R.F, near the Sub-Collector's bungalow which had a small tank with a Banyan tree and was as old nursey site was prescribed to be development into a park of the recreation of the lahabitants of Chingleput. The work was not taken for want of funds.

264. Inter-cropping with legumes – During 1971 to 1973 inter-cropping with Red-gram. Horsegram. Cowpea and Groundut was taken up on a small scale mainly in Cashew plantations with the object of increasing soil fertility by fixing atmospheric nitrogen in it. The nature of the work done and the results obtained are tabulated and furnished below:

STATEMENT GIVING DETAILS OF LEGUMINOUS CROPS RAISED IN PLANTATIONS FROM 1971–72 TO 1973–1974.

Year of raising. (1)	*Name and year of Cashew Tamarind plantation.* (2)	*Crop raised.* (3)	*Extent in hectares.* (4)	*Expenditure in rupees.* (5)	*Yeild.* (6)	*Revenue in rupees.* (7)	*Remarks* (8)
1971–72	Vandalur Cashew, 1957	Redgram	4.04	1,553.00	Stems-256 kg. Seeds-1442 kg. Seeds-1690 kg.	250.00 4,071.60	.. ..
	Anjur Cashew, 1959	Do.	8.09	..	Stems-8 tonnes	200.00	
		Groundnut	0.40	2,648.00	250 litres	60.00	..
		Horsegram	0.81		34 litres	40.00	..
1972–73	Mailapore Cashew, 1956	Redgram	8.00	3,152.00	326.500 kg.	490.00	..
	Manali Cashew, 1958	Do.	8.00	2,822.00			
	Salur Cashew, 1971	Do.	3.00	1,591.00	18 kg.	17.00	..
	Vandalur Cashew, 1957	Do.	4.00	1,070.00	Seeds 1651 kg. Stems 12 CL	1,525.00 260.00	.. ..
	Vandalur Cashew, 1958	Do.	8.00	2,679.00			
	Anjur Cashew, 1959	Do.	9.00	2,593.00	Seeds 75 kg. Stems 3 tonnes	150.00 40.00	.. ..
	Madayathur Cashew, 1958	Do.	8.00	2,414.00	Seeds 110 kg.	104.00	..
	Manali Cashew, 1958	Horsegram	20.00	3,112.00	Seeds 3928 kg. Stems 11¾ CL	2,983.00 144.00	.. ..
	Irugulam Cashew, 1956	Do,	8.00	1,480.00			
	Irugulam Cashew, 1960	Do,	10.00	1,235.00			
	Mailapore Cashew, 1956	Do.	2.00	..			
	Salur Cashew, 1971	Do.	3.00	400.00	Seeds 54 kg.	..	Used as seeds in the 1957 Salur Cashew Plantations
	Kattankolathur Cashew, 1960	Do.	10.00	2,084.00	Seeds 253.00 kg.	..	Used as seed in the 1957 Kattankolathur Cashew plantation.
	Vandalur Cashew, 1958	Do.	16.00	1,782.00	Seeds 1437.00 kg.	1,365.00	..
	Kattur Cashew, 1958	Do.	4.00	287.00	Seeds 155 kg.	155.00	..
	Madayathur Cashew, 1958	Do.	5.00	1,150.00			
	Senkundram Cashew, 1958	Do.	8.00	1,842.00	Seeds 115.00 kg.	..	Given to the District Agricultural Officer, Chingleput for seed purposes.

SᴛᴀᴛᴛᴇᴍᴇɴᴛSTATTEMENT GIVING DETAILS OF LEGUMINOUS CROPS RAISED IN PLANTATIONS FROM 1971-72 TO 1973-74—*cont.*

Year of raising.	Nume and year of Cashew Tamarind plantations.	Crop raised.	Extent in hectares.	Expenditure in rupees.	Yeild.	Revenue in rupees.	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Sirukundram Cashew, 1960	Horse gram	8.00	1,849.00	Seeds-504.00 kg.	..	Given to the District Agricul ural Officer, Chingleput for seed purpose.
	Anjur Tamarind, 1972	Do.	2.00	..	Seeds 164.00 kg.	..	Do.
1973-74	Maganium Cashew, 1972	Do.	10.00	351.00			..
	Madayathur Cashew, 1958	Do.	20.00	965.00	Seeds-155.00 kg. Stems 6 Bundle	132.00 6.00	.. ..
	Mambakkam Cashew, 1973	Do.	20.00	850.00			
	Sulur Cashew, 1959	Do.	10.00	2,261.00	Seed 591.00 kg.	728.70	..
	Kattankolathur Cashew, 1957	Do.	10.00	962.00	Seeds 402.00 kg		..
	Palavakkam Cashew, 1957	Do.	16.00	1,612.00	Seeds 300.00 kg.	225.00	..
1973-74	Irugulam Cashew, 1956	Caster.	20.00	406.00	Seeds 25 kg.	50.00	..
	Vandalur Cashew, 1958	Do.	5.00	971.00			..
	Ajathur Cashew, 1959	Do.	5.00	582.00			..
	Hanumanthaputheri Eucalypt, 1972	Do.	1.00	388.00	Seeds 58.00 kg.	..	Given to the District Agricutural Officer, Chingleput for seed purposes.

Note.—C.L.—Cart Load.

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SECTION 3—SPECIAL WORKS OF IMPROVEMENT

265 *Buildings* The following nineteen buildings were constructed between 1966–67 and 1975–76.

LIST OF BUILDING CONSTRUCTED BETWEEN 1966–67 and 1975–76.

Serial number.	*Year of construction.*	*Description and location of building.*	*Cost of construction in rupees.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
1	1966–67	Forest Rangers quarters at Tambaram	15,328.00	..
2		Forest Range Office at Tambaram	14,178.73	..
3		Foresters quarters at Tambaram	10,191.06	..
4	1967–68	Forest Rest House at Vandalur	49,042.13	..
5		Forest Range Office in Hanumandaputheri R.F. (Chingleput)	14,834.53	..
6		Forest Ranges quarters in Hanumandaputheri R.F. (Chingleput)	15,915.04	..
7	1969–70	Lorry-*cum*-tractor Shed at Vandalur	9,523.42	..
8		Cashew godown in Hanumandaputheri R.F.	6,168.86	..
9		Cashew godown at Vandalur	6,477.52	..
10		Tractor shed in Kattur R.F.	5,803.75	..
11	1970–71	Cashew godown in Illalur R.F.	20,217.96	..
12	1971–72	Combined quarters for Forest Guard and Watcher in Mailapore R.F.	10,733.44	..
13		Double Foresters quarters at Tambaram	22,439.04	..
14		Combined Forest Guards and Watchers quarters in Vadakkupattu R.F.	10,404.95	..
15		Foresters quarters in Sonalur R.F.	11,072.17	..
16		Foresters quarters in Illalur R. F.	13,787.65	..
17	1973–74	Foresters quarters in Mailapore R. F.	17,892.00	..
18		Foresters quarters in Kattankolathur R. F.	18,195.00	..
19		Combined Forest Guards and Watchers quarters in Acharapakkam R. F.	14,902.42	..

266. There are in all 31 buildings in the division constructed at a capital cost of Rs. 3,68,867·28. A detailed list of the buildings is furnished in appendix X.

267. *Wells.*—The following 5 wells were sunk between 1966-67 and 1975-76.

LIST OF WELLS SUNK BETWEEN 1966-67 and 1975-76.

Serial number. (1)	*Years of sinking.* (2)	*Location.* (3)	*Cost of sinking.* (4)	*Remarks.* (5)
1	1967-68	Range Officers quarters in Tambaram R.F.	2,582.75	..
2	1970-71	Bore well at Rest house in Vandalur R.F.	8,475.00	..
3	1973-74	Subordinates quarters in Vadakkupattu R.F.	..	..
4		Subordinates quarters in Mailapore R.F.	1,751.09	..
5		Illalur R.F.	2,370.20	..

268. There are in all 18 wells in the division sunk at a capital cost of Rs. 29,603.98 A detailed list of the wells is furnished in appendlx XI.

SECTION 4—PAST YIELD.

269. The yield obtained from the Fuel and Eucalyptus Working Circle, Eucalyptus infillers of the Cashew Working Circle and the various units of the Minor Forest Produce Working Circle such as Cashew usufructs, Stone quarries and Minor Forest Produce are furnished in the sub-joined statements Wherever possible the yield fetched per hectare has been worked out and furnished.

STATEMENT SHOWING YIELD OF FUEL FROM COUPES OF THE FUEL WORKING CIRCLE.

Year of felling.	*Name of Range.*	*Serial number of coupe worked.*	*Total area worked hectares.*	*Total yield in tonnes.*	*Yield per hectares in tonnes.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. KRISHNAREDDYKONA SERIES.						
1966–67	Tiruvallur.	VIII	..	..	..	Sale dropped.
1967–68	Do.	IX	17.00	Not available.	..	..
1968–69	Do.	X	16.43	147.000	8.95	..
1968–69	Do.	VI	15.78	189.000	11.98	Arrear coupe.
1970–71	Do.	XII	19.23	127.200	6.61	..
1970–71	Do.	XI	15.80	65.000	4.11	Arrear coupe.
1971–72	Do.	XIII	11.13	131.000	11.78	..
1972–73	Do.	XIV	20.30	149.000	7.34	..
1973–74	Do.	XV	17.40	10.000	0.57	..
1974–75	Do.	XVI	..	..	..	Sale dropped.
2. NAKKALAKONA SERIES.						
1966–67	Do.	XXV	..	..	..	Sale dropped.
1967–68	Do.	XXIV	6.48	Not available	..	.. ..
1968–69	Do.	XXVII	6.77	Do.	..	..
1970–71	Do.	XXIX	7.85	40.000	5.30	..
1970–71	Do.	XXVIII	5.10	..	..	Arrear coupe, Net worked.
1971–72	Do.	XXX	8.60	193.200	22.47	..
1972–73	Do.	I	6.70	147.000	21.94	..
1972–73	Do.	XXVIII	5.10	141.000	27.65	..
1973–74	Do.	II	8.10	20.000	2.47	..
1974–75	Do.	III	..	..	..	Sale dropped.

STATEMENT SHOWING YIELD OBTAINED BY SALE OF EUCALYPTUS INFILLERS IN CASHEW PLANTATIONS OF THE CASHEW WORKING CIRCLE.

Serial number	*Year of clear felling.*	*Name and year of cashew plantation.*	*Year of inter-planting, hectares.*	*Area of Cashew plantation in hectares.*	*Total yield in tonnes.*	*Yield per hectare.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. TIRUVALLUR RANGE.							
1	1973–74	1956 Mailapore	1963	209·22	11·29	0·05	....
2	Do.	1956 Mailapore	1964	209·22	..	..	Not worked
3	Do.	1960 Manali	1962	69·20	7·81	0·11	....
4	Do.	1956 Irukulam	1963	202·34	61·26	0·30	....
2. TAMBARAM RANGE.							
1	1973–74	1959 Nallur	1962	52·61	65·50	1·25	....
2	Do.	1960 Nallur	1962	197·08	76·00	0·39	....
3	Do	1957 Vandalur	1964	209·63	65·00	0·37	....
4	Do.	1956 Gudalur	1963	267·09	101·99	0·38	....
5	Do.	1956 Vadakkupattu	1963	207·19	132·52	0·64	....
3. KEILAMBAKKAM RANGE.							
1	1973–74	1959 Anjur	1962	186·94	70·00	0·38	....
2	Do.	1956 Tirutheri	1962	..	..	..	..
3	Do.	1956 Tirutheri	1963	178·87	370·14	2·07	....
4	Do.	1959 Anjur	1963	184·94	2·00	0·01	....
5	Do.	1956 Thaiyur	1963	23·67	199·59	0·87	....
6	Do.	1956 Mambakkam	1963	101·17	249·18	2·46	....
7	Do.	1956 Mambakkam	1964	117·36	338·53	2·88	....

4. CHINGLEPUT RANGE.

1	1973-7	1959 Salur	1962	195·6	873·59	4·47	....
2	Do.	1960 Appur	1962	87·41	180·47	2·06	....
3	Do.	1957 Siruvanjur	1961	203·96	0·	0·02	....
	Do.	1957 Tirukkalikundram	1965	161·47	9·22	0·06	....
5	Do	1959 Salur	1963	195·46	533·55	2·73	....
	(1)	(2)	(3)	(4)	(5)	(6)	(7)

5. MADURANTHAKAM RANGE.

1	1973-7	1956 Illalur	1963	212·46	1,032·55	0·24	....
2	Do.	1956 Illalur	1964				
3	Do.	1957 Illalur	1961	211·65	50·57	0·21	....
4	Do.	1956 Kattur	1963	219·74			
5	Do.	1957 Kattur	1961	205·94	264·61	0·43	....
6	Do	1958 Kattur	1961	194·65			
7	Do	1959 Kattur	1962	195·87	1,429·68	7·30	....

STATEMENT SHOWING THE YIEBD OF CAJHBW RAWNUTJ FROM THE MINOR FOREST PRODUCE WORKING CIRCLE

Serial number and name of the Range.	Name of plantation.	Year of Plantation.	Area in hectare.	Total yield in Kilogram.				
				1966–67	1967–68	1968–69	1969–70	1970–71
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1 Tiruvallur ..	Allikuli	1945	1·21	..	22·000	19·000	14·000	30·000
2 Do.	Pullambakkam	1953	52·61	..	160·000	100·00	28·000	170·000
3 Do.	Mailaporr	1956	209·22	2,750·000	3,600·00	2,621·000	5,597·550	9745·800
4 Do.	Irugulam	1956	202·34	2,560·000	2,820·000	2,292·000	2,083·000	7108·00
5 Do.	Irugulam	1960	112·50	..	10,000		43·000	72·000
6 Do.	Palavakkam	1957	212·87				3,630·000	5,270·000
7 Do.	Manali	1958	170·78	2,800·000	1,680·000	1,455·000	141·500	1,932·000
8 Do.	Manali	1959	217·72				97·500	909·000
9 Do.	Manali	1960	69·20	..	..	58·000	75·500	770·000
10 Do.	Erumaivettipalayam	1960	142·85	..	80·000	149·500	149·000	252·000
11 Do.	Pulikundram	1959	23·00	..	..	..	..	..
12 Tambaram	Vandalur	1947	0·40	1·610	1,994·00	16·000	9·000	101·500
13 Do.	Vandalur	1956	234·31	1,116·560		2,817·600	1,759·000	5,579·00
14 Do.	Vandalur	1957	209·63	1,786·000	700·000	2,221·500	57·000	7,075·000
15 Do.	Vandaiur	1958	189·39	595·000	433·000	1232·000	97·000	1,342·300
16 Do.	Vandalur	1959	84·94	530·000		768·000	31·000	980·200
17 Do.	Vadakkupattu	1956	207·19	823·000	320·000	584·000	278·000	1,309·400
18 Do.	Unamanjeri	1959	129·09	..	93·000	165·900	876·000	3,638·700
19 Do.	Gudalur	1956	267·09	1,710·000	1,880·000	2,304·500	9,022·000	15,088·000
20 Do.	Gudalur	1957	210·44	2,515·000		1,553·500	12·000	6,664·000

STATEMENT SHGWING THE YIELD OF CASHEW RAWANTS FROM WAS MINOR FOREST PRODUCT WORKING CIRCLE.

Serial number and name of Range. (1)		*Name of Plantation.* (2)	*Year of Plantation.* (3)	*Area in hectare.* (4)	*Total yield in kilogram.*				
					1971–72 (5)	1972–73 (6)	1973–74 (7)	1974–75 (8)	1975–76 (9)
1	Tiruvallur	Allikuli	1945		44·500	109·000	72·500	13·500	10·000
2	Do.	Pulhambakkam	1953		411·500	302·000	217·000	58·000	35·000
3	Do.	Mailapore	1956		13,202·800	15,404·900	9,669·500	11,083·500	5,943·000
4	Do.	Irugulam	1956		9,940·000	10,176·250	6,530·000	8,489·500	6,130·000
5	Do.	Irugulam	1960		102·000	628·000	1,054·500	1,217·000	1,319·000
6	Do.	Palavakkam	1957		6,761·250	7,277·000	4,273·000	3,750·000	3,652·000
7	Do.	Manali	1958		3,643·750	5321·000	7,182·400	5,764·000	6,633·000
8	Do.	Manali	1959		971·750	1,723·000	674·000	569·000	992·000
9	Do.	Manali	1960		662·000	1,477·500	486·000	409·000	265·000
10	Do.	Erumaivettipalayam	1960		331·000	3,112·500	4,466·000	4,115·500	2,056·000
11	Do.	Pulikundram	1959		55·500	99·000	109·250	85·000	37·000
12	Tambaram	Vandalur	1947		87·500	105·000	90·000	24·000	1·000
13	Do.	Vandalur	1956		8,578·500	2,974·750	3,611·000	1,189·000	80·000
14	Do.	Vandalur	1957		7,990·000	8,926·000	8,729·000	3,944·000	406·00
15	Do.	Vandalur	1958		3,160·500	4,536·500	7,195·000	11,687·500	3,372·0
1	Do.	Vandalur	1959		1,[illegible]26·500	1,859·000	1,445·000	979·500	245·000
17	Do.	Vadakkupattu	1956		1,335·000	1,972·000	1,050·000	3,139·500	613·000
18	Do.	Unamanjeri	1959		4,237·000	4,237·000	2,865·000	1,998·000	117·000
19	Do.	Gudalur	1956		1,7913· 000	12,105·000	8,153·000	4,195·500	1,321·000
20	Do.	Gudalur	1957		10,414·500	11,897·000	8,533·000	2,103·500	440·000

Serial number and name of the Range.	Name of Plantation.	Year of Plantation.	Area in hectare.	Total yield in kilogram.				
				1966–67	1967–68	1968–69	1969–70	1970–71
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
21 **Tamberam**	Gudalur	1958	203·15	1,824·000	899·400	3,685·000	1,775·000	13,72[illegible].500
22 Do.	Nallur	1959	52·61	200 MM	78·000	6·000	30·000	10·000
23 Do.	Nallur	1960	197·08	100 MM		9·500	50·500	20·000
24 Do.	Maganiam	1959	211·65	..	45·000	53·500	67·000	10·000
25 Do.	Do.	1960	65·96	..		31·500	33·500	22·000
26 Do.	Kumuli	1960	178·47	..	129·000	168·000	28·000	214·500
27 Do.	Mannur	1954	90·65	..	25·000	0·150	..	10·00
28 **Kelambaukam**	Tirutheri	1956	186·96	1,600·000	630·000	840·000	2,612·0000	6054,000
29 Do.	Do.	1957	79 32	360 000		852.000	773 000	1,497·000
30 Do.	Mambakkam	1956	218·53	1,100·000	1,300·000	936·000	1,119·000	3,445·000
31 Do	Do.	1957	174·26	500·000		574.330	1,793·000	3,744·000
32 Do.	Do.	1958	222·58	383·000		262·000	553·000	3,052·000
33 Do.	Thaiyur	1956	230·67	330·000	400·000	545·000	220·000	897·000
34 Do.	Thaiyur	1957	60·70	230·000		244·000	125·000	801·000
35 Do.	Sengundram	1957	152·16	665·000	330·000	400·000	..	1,298·00
36 Do.	Do.	1958	226·62	574·00		924·000	408·000	1,629·000

Serial number and name of the Range.	Name of Plantation.	Year of Plantation.	Area in hectares.	Total yield in kilogram.				
				1971–72	1972–73	1973–74	1974–75	1975–76
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
21 Tambaram	Gudalur	1958		9,937·000	10,414·500	7,275·000	1,855·000	609·000
22 Do.	Nallur	1959		875·000	4,180·000	4,315·000	3,516·000	1,892·000
23 Do.	Nallur	1960		498·000	2,793·500	3,130·000	5,748·000	3,446·000
24 Do.	Maganiam	1959		1,688·000	3,103·000	5,038·000	4,586·000	1,347·000
25 Do.	Do.	1960		546·000	605·000	795·000	531·000	55·000
26 Do.	Kumuli	1960		596·000	725·000	831·000	690·000	192·000
27 Do.	Mannur	1954		16·000	32·000	52·000	83·000	29·000
28 Kelambakkam	Tirutheri	1956		3,691·500	7,977·000	4,538·000	3,787·000	3,087·000
29 Do.	Do.	1957		2,244·000	7,017·000	4,246·000	2,511·000	460·000
30 Do.	Mambakkam	1956		5,056·000	5,023·000	3,842·000	3,419·000	809·000
31 Do.	Do.	1957		3,623·000	2,258·000	1,880·000	4,855·000	1,600·000
32 Do.	Do.	1958		4,358·000	6,697·500	6,726·000	9,631·000	3,768·000
33 Do.	Thaiyur	1956		1,667·000	1,074·000	876·500	1,178·000	1,130·000
34 Do.	Thaiyur	1957		636·000	2,283·000	2,089·000	2,984·000	1,415·000
35 Do.	Sengundram	1957		1021·000	2,596·000	4,138·000	2,621·000	349·000
36 Do.	Do.	1958		2,029·000	12,038·000	12,325·000	21,272·500	7,468·000

Serial number and name of the range. (1)	Name of plantation. (2)	Year of plantation. (3)	Area in hectares. (4)	Total yield in kilograms. 1966–67 (5)	1967–68 (6)	1968–69 (7)	1969–70 (8)	1970–71 (9)
37 Kelambakkam—*cont.*	Sonalur	1959	214·08	..	7,000	25·000	157·000	189·00
38 Do.	Do.	1960	150·14	..		7·100	21·000	21·000
39 Do.	Anjur	1959	184·94	..	270·000	890·000	17·500	1,557·000
40 Do.	Kayar	1959	131·12	..	..	0·315	..	..
41 Do.	Do.	1960	38·85	..	..	9·330	5·000	..
42 Do.	Sirukundram	1959	57·46	200·000	70·000	470·000	91·000	995·000
43 Do.	Do.	1960	134·76	100·000		117·500	..	393·500
44 Chingleput	Tirukkalikundram	1957	161·47	4,655·000	290·200	2,641·000	3,519·000	2,376·000
45 Do.	Do.	1958	208·01			2,800·000	6,937·000	3,864·000
46 Do.	Kattankolathur	1957	13·76	400·000	1,158·400	360·000	..	212·000
47 Do.	Do.	1958	217·31				1,201·000	7,655·500
48 Do.	Do.	1961	13·11	..	..	..	..	..
49 Do.	Siruvanjur	1957	203·96	400·00	240·000	457·000	427·000	2,665·125
50 Do.	Salur	1959	195·46	320·000	..	740·000	886·000	1,153·000
51 Do.	Edamachi	1959	98·74	37·000	..	..	..	..
52 Do.	Appur	1960	87·41	7·000	..	11·000	17·000	47·250

Serial number and *name of the range.* (1)	*Name of plantation.* (2)	*Year of plantation.* (3)	*Area in hectares.* (4)	*Total yield in kilograms.*				
				1971–72 (5)	1972–73 (6)	1973–74 (7)	1974–75 (8)	1975–76 (9)
37 Kelambakkam—*cont.*	Sonalur	1959		254·000	2,319·000	2,413·000	1,515·000	191·000
38 Do.	Do.	1960		81·50	60·000	203·000	276·000	..
39 Do.	Anjur	1959		3814·000	11,270·000	10,925·000	16,277·000	2,986·000
40 Do.	Kayar	1959		..	8·000	9·000	12,000	6·000
41 Do.	Do.	1960		19·000	29·000	18·500	28·000	4·000
42 Do.	Sirukundram	1959		604·000	1,726·000	2,157·000	1,536·000	631·000
43 Do.	Do.	1960		310·000	743·500	1,318·000	1,237·000	550·000
44 Chingleput.	Tirukkalikundram	1957		5,137·000	3,969·000	4,232·000	6,170·000	3,141·000
45 Do.	Do.	1958		5,490·000	3,213·000	4,942·000	6,834 500	4,711.000
46 Do.	Kattankolathur	1957		74·000	221·000	309·000	322·500	89.000
47 Do.	Do.	1958		6,800·000	10,589·150	7,890·200	7,056·000	5,565·000
48 Do.	Do.	1961		..	83·000	306·150	607·000	24.000
49 Do.	Siruvanjur	1957		4,495 500	5,018·500	6,315·500	9,859·00	8,881.000
50 Do.	Salur	1959		2,564 000	4,229·000	5,036·000	5,714·000	3,190 00
51 Do.	Edamachi	1959		..	..	..	..	..
52 Do.	Appur	1960		34·500	38·900	39 000	59·000	15·000

Serial number and name of the range.		Name of plantation.	Year of plantation.	Area in hectares.	Total yield in kilograms.				
					1966–67	1967–68	1968–69	1969–70	1970–71
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
53	Dc.	Ka[illegible]anipakkam	1960	69·20	..	..	..	..	1,290
54	Madurantakam	Maiyur	1956	36·02	..	140·00	1,829·000	2,836·000	3,686·000
55	Do.	Do.	1958	10·12	..				
56	Do.	Do.	1959	10·12	..				
57	Do.	Valluvapakkam	1959	103·60	..	..	..	..	..
58	Do.	Illalur	1956	212·46	1,886·80	856·460	2,336·600	7,186·000	7,572·000
59	Do.	Illalur and Madayathur	1957	211·65	1,887·900		6,344·650	2,322·000	1,9304·000
60	Do.	Madayathur	1958	205·18	1824·500	..	1,704·200	487·000	3,893·500
61	Do.	Do.	1959	41·28	1848·800	1,250·400			
62	Do.	Alathur (Madayathur)	1959	167·13			..	369·000	1,781·500
63	Do.	Alathur	1960	51·82	50·000	Nil.	50·000	74·700	183·700
64	Do.	Oragadam	1960	162·68					
65	Do.	Kattur	1956	219·74	2,156·000	1,084·000	1,862·000	836·000	4,749·000
66	Do.	Do.	1957	205·98	600·00		1,200·000	230·000	4,646·000
67	Do.	Do.	1958	194·65	800·000	240·000	638·000	243·000	6,071·000
68	Do.	Do.	1959	195·87	1,800·000	490·000	2,410·000	167·000	8,343·000
69	Do.	Thandalam	1969	20·00	Nil.	Nil.	Nil.	Nil.	Nil.
70	Do.	Illalur	1969	5·00	Nil.	Nil.	Nil.	Nil.	Nil.

Serial number and name of the range. (1)		Name of plantation. (2)	Year of plantation. (3)	Area in hectares. (4)	Total yield in kilograms. 1971–72 (5)	1972–73 (6)	1973–74 (7)	1974–75 (8)	1975–76 (9)
53	Chingleput—*cont.*	Kavanipakkam	1960		..	..	19·000	15·000	3·000
54	Madurantagam	Maiyur	1956		5,657·000	5,870·000	3,680·000	5,219·000	3,963·000
55	Do.	Do.	1958						
56	Do.	Do.	1959						
57	Do.	Valluvapakkam	1959		..	27·500	12·000	21·500	..
58	Do.	Illalur	1956		9,808·000	8,729·000	4,788·000	4,497·000	1,679·00
59	Do.	Illalur and Madayathur	1957		14,462·000	24,826·000	18,593·500	28,385·000	8,109·000
60	Do.	Madauathur	1958		5,403·000	11,677·000	10,324·000	10,576·000	2,790·000
61	Do.	Do.	1959		129·000	4,646·500	4,815·000	6,289·000	5,555·000
62	Do.	Alathur (Madayathur)	1959			129·000	80·000	142·000	
63	Do.	Alathur	1960		2,537·000	721·000	969·000	1,058·0000	745·000
64	Do.	Oragadam	1960			1,182·250	1,222·000	1,578·000	
65	Do.	Kattur	1956		6,169·000	6,018·400	3,488·000	2,717·000	1,901·000
66	Do.	Do.	1957		6,622·000	6,382·300	3,428·000	3,628·000	1,127·000
67	Do.	Do.	1958		5,08·4000	9,651·000	,864·000	31,783·500	9,450·000
68	Do.	Do.	1959		6,689·500	4,636·500	4,724·000	3,546·000	1,333·000
69	Do.	Thandalam	1969		..	..	..	..	254·000
70	Do.	Illalur	1969		..	..	..	..	137·000

RANGEWISE ABSTRACT OF YIELD.

	Area in hectares.	1966-67	1967-68	1968-69	1969-70
Tiruvallore	1,414·30	8,110·000	8,372·000	6,694·500	11,859·050
Tambarom	2,532·05	11,201·000	6,596·400	15,516·060	14,125·000
Kelambakkam	2,463·15	6,042·000	3,007·000	5,096·575	7,894·500
Chingleput	1,265·43	5,819·000	688·600	7,[illegible]09·000	12,980·000
Madurantagam	2,053·30	128,54·000	4,060·860	17,504·750	14,750·700

RANGEWISE ABSTRACT OF YIELD—*cont.*

	1970-71	1971-72	1972-73	1973-74	1974 75	1975-76
Tiruvallur	26,258·800	36,075·550	45,630·150	34,734·350	34,734·350	27,072·000
Tambaram	55,793·000	69,525·500	70,465·000	73,107·000	46,269·500	14,165·000
Kelambakkam	25,633·000	29,386·000	63,362·000	57,777·000	73,021·500	24,493·000
Chingleput	17,974·125	2459,5·000	27,361·550	29,088·850	36,637·850	25,619·000
Madurantakam	60,229·700	62,560·500	84,496·450	64,987·590	81,440·000	37,043·000

STATEMENT SHOWING THE YIELD OBTAINED FRO THE STONE QUARRIES OF THE MINOR FOREST PRODUCE WORKING CIRCLE.

Serial number and name and number of quarry. (1)			1966–67 cft. (2)	1967–68 cft. (3)	1968–69 cft. (4)	1969–70 cft. (5)	1970–71 cft. (6)	1971–72 cft. (7)	1972–73 cft. (8)	1973–74 cft. (9)	1974–75 cft. (10)	1975–76 cft. (11)
						1. TAMBARAM RANGE.						
1	Tambaram	No. 1 ..	14,800	1,700	Sale dropped.	19,000	21,000	3,300	Not furnished	Not furnished.	Sale dropped.	..
2	Do.	No. 2 ..	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped	Saledropped.	Sale dropped.	Sale dropped.	Sale dropped.	Not furnished.	..
3	Do.	No. 3 ..	1,200	5,400	5,400	8,000	8,000	8,300	Not furnished.	Not furnished	Do.	..
4	Do.	No. 4 ..	13,000	6,500	6,500	6,500	6,500	1,700	Do.	Do.	Do.	..
5	Do.	No. 5 ..	13,500	10,000	3,900	..	..	Sale dropped.	Sale dropped.	Sale dropped.	Do.	..
6	Do.	No. 6 ..	6,400	8,000	3,500	..	Sale dropped.	10,400	Not furnished.	Not furnished.	Do.	..
7	Do.	No. 7 ..	10,000	12,650	900	34,200	34,200	16,700	Do.	Do.	Do.	..
8	Do.	No. 8 ..	14,900	3,400	Not furnished.	5,000	5,000	12,100	Do.	Do.	Do.	..
9	Do.	No. 9 ..	30,780	5,700	5,700	14,800	14,800	17,000	Do	Do.	Do.	..
10	Do.	No. 10 ..	15,020	Not furnished.	Sale dropped.	Not furnished.	Not furnished.	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	..
11	Do.	No. 11 ..	27,200	18,700	18,700	13,200	13,200	Do.	Do.	Do.	Do.	..
12	Do	No. 12 ..	31,000	16,200	15,900	15,500	15,500	Do	Do	Do	Not furnished	..
13	Do	No. 13 ..	23,500	18,800	8,300	14,000	14,500	8,400	Not furnished	Not furnished	Do.	..
14	Do.	No. 14 ..	Not furnished.	5,100	3,200	10,400	10,400	10,400	Do.	Do	Sale dropped.	..
15	Do.	No. 15 ..	..	17,750	40,100	Not furnished.	21400	10,700	Do.	Do.	Not furnished.	..
16	Do.	No. 16 ..	20,000	11,500	Sale dropped.	1,06,200	1,06,200	59,400	Do.	Do.	Do.	..
17	Do.	No. 17 ..	25,094	Sale dropped.	Do.	Sale dropped.	Sale dropped.	Not furnished.	Do.	Do.	Sale dropped.	..
18	Do.	No. 18 ..	3,200	2,300	2,000	10,000	10,000	4,900	Not furnshed.	Not furnished.	Not furnished.	..
19	Do.	No. 19 ..	9,300	7,700	4,100	11,600	11,600	15,900	Do.	Do	Do.	..
20	Do.	No. 20 ..	Sale dropped.	Sale dropped	Sale dropped.	..	Sale dropped.	10,000	Do.	Do	Sale dropped	..
21	Do.	No. 21 ..	Do.	Do.	Do.	6,400	6,400	5,500	Do	Do.	Not furnished.	..
22	Do.	No 22 ..	3,800	7,100	16,000	11,700	11,700	16,800	Do	Do.	Sale dropped.	..

Serial number name and number of quarry. (1)			1966067 *Metal in cft.* (2)	1967–68 *Metal in cft.* (3)	1968–69 *Metal in cft.* (4)	1969–70 *Metal in cft.* (5)	1970–71 *Metal in cft.* (6)	1971–72 *Metal in cft.* (7)	1972–72 *Metal in cft.* (8)	1973–74 *Metal in cft.* (9)	1974–75 *Metal in cft.* (10)	1975–76 *Metal in cft.* (11)
23	**Tambaram**	No. 23	3,830	Sale dropped.	Sale dropped.	..	Sale dropped.	1,220	Do.	No.	Not furnished.	..
24	Do.	No. 24	29,300	21,300	5,600	26,800	26,800	16,300	Do.	Do.	Do.	..
25	Do.	No. 25	Not included in the Working Circle.									
26	Do.	No. 26	(Not included in the Working Circle.)									
27	Do.	No. 27	25,200	2,200	9,900	17,900	17,900	20,875	Not furnished.	Not furnished.	Not furnished.	..
28	Do.	No. 28	Sale dropped.	3,800	1,800	7,500	7,500	7,900	Do.	Do.	Do.	..
29	Do.	No. 29	50,300	57,800	46,100	5,000	5,000	8,100	Do.	Do.	Do.	..
30	Do.	No. 30	9,300	7,500	4,500	11,500	11,500	10,000	Do.	Do.	Do.	..
31	Do.	No. 31	9,800	6,800	3,800	11,300	11,300	16,000	Do.	Do.	Do.	..
32	Do.	No. 32	3,400	4,600	4,600	10,600	10 600	19,800	Do.	Do.	Do.	..
33	Do.	No. 33	4,300	4,880	1,000	1,300	1,300	6,920	Do.	Do.	Do.	..
34	Do.	No. 34	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	7,900	Do.	Do.	Do.	..
35	Do.	No. 35	Not included in the Working Circle.									
36	Do.	No. 36	980	Sale dropped.	1,000	Not furnished.	Not furnished.	Not furnished	Not furnished.	Note furnished	Not furnished	..
37	Do.	No. 37	1,500	2100	Sale dro·ped.	800	800	6,500	Do.	Do.	Do.	..
38	Do.	No. 38	Not included in the Working Circle.									
39	Do.	No. 39	8,400	7,200	4,500	13,500	13,500	14,800	Not furnished.	Not furnished.	Not furnished.	..
40	Do.	No. 40	4,200	Sale dropped.	Sale dropped.	12,300	12,300	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	..
41	Do.	No. 41	Sale dropped.	Do.	Do.	..	..	4,485	Not furnished.	Not furnished.	Not furnished.	..
42	**Pulikkaradu**	No. 1	Do.	Do.	Do.	1,975	1,975	3,100	Do.	Do.	Do.	..
43	Do.	No.	2,500	1,200	1,200	2,000	2,000	3,700	Do.	Do.	Do.	..
44	Do.	No. 3	Sale dro·ped.	Sale dropped.	Sale dropped.	3,000	3 000	4,300	Do.	Do.	Do.	..
45	Do.	No. 4	22,000	11,600	Not furnished.	11,250	11,250	17,075	Do.	Do.	Do.	

46	Do.	No. 5	Not furnished.	Sale dropped.	2,100	41,000	Not furnished.	6,100	Not furnished.	Not furnished.	Not furnished.	..
47	Do.	No. 6	Do.	Do.	Sale dropped.	Not furnished.	Do.	3,500	Do.	Do.	Sale dropped.	..
48	Do.	No. 7	9,160	4,600	2,000	9,720	9,720	3,900	Do.	Do.	Not furnished	..
49	Pulikkaradu	No. 8	8,790	6,210	Sale dropped.	Sale dropped.	Sale dropped.	5,000	Not furnished.	Not furnished.	Not furnished.	..
50	Do.	No. 9	8,200	Not furnished.	2,000	9,300	9,300	13,320	Do.	Do.	Do.	..
51	Do.	No. 10	4,820	Not furnished.	Not furnished.	9,000	9,000	7,437	Do.	Do.	Do.	..
52	Do.	No. 11	5,400	3,900	2,700	3,400	3,400	6,750	Do.	Do.	Do.	..
53	Do.	No. 12	6,300	Sale dropped.	Sale dropped.	1,700	1,700	5,825	Do.	Do.	Do.	..
54	Do.	No. 13	6,500	3,200	3,600	5,200	5,200	6,875	Do.	Do.	Do.	..
55	Do.	No. 14	4,000	2,200	2,500	5,300	5,300	7,900	Do.	Do.	Do.	..
56	Do.	No. 15	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	400	Do.	Do.	Do.	..
5	Do.	No. 16	8,500	Do.	Do.	Do.	Do.	Sale dropped.	Sale dropped.	Sale dropped.	Do.	..
58	Do.	No. 17	13,600	6,000	3,900	13,300	13,300	13,400	Not furnished.	Not furnished.	Do.	..
59	Do.	No. 18	2,100	3,500	200	12,500	12,500	92,00	Do.	Do.	Do.	..
60	Do.	No. 19	11,000	30,625	6,750	Sale dropped.	Sale dropped.	19,000	Do.	Do.	Sale dropped.	..
61	Do.	No. 20	1,300	Sale dropped.	Sale dropped.	Do.	Do.	16,300	Do.	Do.	Not furnished.	..
62	Do.	No. 21	1,800	6,900	3,100	24,500	24,500	22,600	Do.	Do.	Do.	..
63	Do.	No. 22	7,500	9,500	Not furnished.	Not furnished.	Not furnished.	600	Do.	Do.	Do.	..
64	Do	No. 23	8,200	4,200	1,700	12,100	12,100	9,300	Do.	Do.	Do.	..
65	Do.	No. 24	..	..	Sale dropped.	Sale dropped.	Sale dropped.	6,200	Do.	Do.	Do.	..
66	Do.	No. 25	..	..	..	..	..	..	..	..	Do.	..
67	Do.	No. 26	..	..	..	..	..	..	..	..	Do.	..
68	Do.	No. 27	..	..	..	..	..	..	..	..	Do.	..

Serial number, name and number of quarry.	1966-67 Metal in cft.	1967-68 Metal in cft.	1968-69 Metal in cft.	1969-70 Metal in cft.	1970-71 Metal in cft.	1971-72 Metal in cft.	1972-73 Metal in cft.	1973-74 Metal in cft.	1974-75 Metal in cft.	1975-76 Metal in cft.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
69 Pulikkaradu .. No. 28 ..	..	..	..	..	..	..	..	..	Do.	..
70 Do. .. No. 29 ..	..	..	..	..	..	..	..	..	Do.	..
71 Do. .. No. 30 ..	..	..	..	..	..	..	..	..	Do.	..
72 Do. .. No. 31 ..	..	..	..	..	..	..	..	..	Do.	..
73 Do. .. No. 32 ..	..	..	..	..	..	..	..	..	Do.	..
74 Do. .. No. 33 ..	..	..	..	..	..	..	..	..	Do.	..
75 Do. .. No. 34 ..	..	..	..	..	..	..	..	..	Sale dropped.	..
76 Unamanjeri .. No. 1 ..	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	Boulders—1,435 tons.	Not furnished.	Sale dropped.	Not furnished.	..
77 Do. No. 2 .	Do.	Do.	Do.	Do.	Do.	Boulders.—2,405 tons.	Do.	Do.	Do.	.
78 Do. .. No. 3 ..	Do.	Do.	Do.	Do.	Do.	2,730	Do.	Not furnished.	Do.	.
79 Do. .. No. 4 .	Do.	Do.	10,000	35,400	35,400	13,800	Do.	Do.	Do.	.
80 Do. .. No. 5 ..	Not furnished.	Not furnished.	14,300	36,000	36,000	1,554	Do.	Do.	Do.	.
81 Do. .. No. 6 ..	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	1,900	Do.	Metal—3,475 cft. Boulders—235 tons.	Do.	..
82 Do. .. No. 7 ...	Not furnished.	Do.	Do.	Do.	Do.	3,600	Do.	Sale dropped.	Do.	..
83 Do. .. No. 8 ..	Do.	Do.	Not furnished.	Do.	Do.	Sale dropped.	Sale dropped.	Do.	Do.	..
84 Do. .. No. 9 ..	Sale frunished.	Do.	Sale dropped.	Do.	Do.	Do.	Do.	Do.	Do.	..
85 Do. .. No. 10	Do.	Do.	Do.	Do.	Do.	Not furnished.		Do.	Do.	..
86 Do. .. No. 11	Do.	Do.	Do.	Do.	Not furnished.	Do.	Do.	Do.	Do.	..
87 Do. .. No. 12	Do.	Do.	Do.	Do.	Do.	Boulders—2,595 tons.	Do.	Sale dropped.	Do.	..
88 Do. .. No. 13	Do.	Do.	Do.	Do.	Do.	Boulders—735 tons	Do.	Do.	Do.	..

89	Do.	.. No. 14	Do.	Do.	Do	Do	Do.	Metal— 5,125 cft. Boulders— 158 tons.	Do.	Meta—1 9,700 cft. Boulders— 188 tons.	Do	..
90	Do.	.. No. 15	Do.	Do.	Do.	Do	Sale dropped.	Boulders— 1,036 tons.	Do.	Sale dropped.	Do	
91	Do.	.. No. 16	..	..	..	..	Not furnished.	Not furnished.	Do.	Do.	Do	
92	Unamanjeri	.. No. 17	..	..	..	.	..	Not furnished	Not furnished	Not furnshed.	Not furnished	
93	Do.	.. No. 18	..	..	..	..	..	..	Do.	Do.	Do.	.
94	Do.	.. No. 19	..	..	..	..	..	..	..	Do.	Do.	..
95	Do.	.. No. 20	..	..	..	.	..	..	..	Do.	Do.	.
96	Nanmangalam	.. No. 1 .	Not available.									
97	Do	. No 2 ..	Do	38,875	7,625	Sale dropped	7,625	7,625	Not furnished	48,320	Do	..
98	Do	.. No 3 ..	Do									
99	Do	. No 4 ..	Do									
100	Do	.. No 5 ..	Do.	.	.	Not furnished	Not furnished	Sale dropped	.	Not furnished	Do	.

2. CHINGLEPUB RANGE.

Serial number name and number of quarry			1966–67 Metal in cft.	1967–68 Metal in cft.	1968–69 Metal in cft.	1968–69 Metal in cft.	1969–70 Metal in cft.	1970–71 Metal in cft.	1971–72 Metal in cft.	1972–73 Metal in cft.	1973–74 Metal in cft.	1974–75 Metal in cft.
(1)			(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Appur ..	.. No. 1 .	Sale dropped.	Sale dropped.	Not furnished.	Not furnished.	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	Sale dropped.	..

3. MADURANTAKAM RANGE.

1	Oragadam	.. No. 1 ..	.	..	..	..	Sale dropped.	Sale dropped.	Sale dropped.	5,400	Not furnished.	..
2	Do.	.. No. 2 ..	..	..	..	..	Do.	Do.	Do.	Not furnished.	Do.	..
3	Do.	.. No. 3 .	.	.	.	.	.	.	..	Do.	Do.	..
4	Do.	.. No. 4 .	..	..	..	.	.	.	.	Sale dropped.	Sale dropped.	.
5	Navalur	. No. 1 ..	..	.	.	..	..	..	..	Not furnished.	Not furnished.	..

STATEMENT OF YIELD OBTAINED FROM THE MINOR FOREST PRODUCE UNITS OF THE MINOR FOREST PRODUCE WORKING CIRCLE.

Serial numder and name of the M.F.P. Unit.	1966–67		1967–68		1968–69		1969–70		1970–71	
	Name of M.F.P. sold.	*Yield obtained.*	*Name of M.F.P. sold.*	*Yield obtained.*	*Name of M.F.P. sold.*	*Yield obtained.*	*Name of M.F.P. sold.*	*Yield obtained.*	*Name of M.F.P. sold.*	***Yield obtained. sold.***
1. Tiruvallur Range	M.F.P.	Sale dropped.	M.F.P.	Not furnished.	M.F.P.	Not furnished.	M.F.P.	Sale droped.	M.F.P.	4,050 palmyrah leaves.
2. Tiruvallur Range	Avaram bark.	Sale dropped.	Avaram bark.	Sale dropped.	Avaram bark.	Not furnished.	Avaram bark.	Sale dropped.	Avaram bark.	Sale dropped.
3. Tambaram Range	M.F.P.	Sale dropped.	M.F.P'	Sale dropped.	M.F.P.	Sale dropped.	M.F.P.	Sale dropped.	M.F.P.	Sale dropped.
4. Kelambakkam Range	M.F.P.	Sale dropped.	M.F.P.	Sale dropepd.	M.F.P.	Sale dropped.	M.F.P.	Sale dropped.	M.F.P.	Sale dropped.
5. Chingleput Range	M.F.P.	Sale dropped.	M.F.P.	Sale dropped.	M.F.P.	Sale dropped.	M.F.P.	Sale dropped.	M.F.P.	Sale dropped.
6. Madurantakam Range	M.F.P.	5,500 Palmyrah leaes.	M.F.P.	Sale dropped.	M.F.P.	2,000 Palmyrah leaves.	M.F.P.	10,000 Palmyrah leaves.	M.F.P.	9,400 Palmyrah leaves.

STATEKENT OS YIEBD OBTAINED FROM THE MINOR FOREST PRODUCE UNIT OF THE MINOR FOREST PRODUCE WORKING CIRCLE.

Serial number and name of M.F.P. Unit.	1971–72		1972–73		1973–74		1974–75		1975–76	
	Name of M.F.P. sold.	*Yield obtained.*	*Name of M.F.P. sold.*	*Yield obtained.*	*Name of M.F.P. syld.*	*Yield obtained.*	*Name of M.F.P. sold.*	*Yield obtained.*	*Name of M.F.P. sold.*	*Yield obtained.*
1. Tiruvallur Range	M.F.P.	Sale dropped.	M.F.P.	Sale dropped.	M.F.P.	Sale dropped.	M.F.P.	Not furnished.	M.F.P.	Sale dropped.
2. Tiruvallur Range	Avaram bark.	Sale dropped.	Aavaram bark.	Sale dropped.	Avaram bark.	Sale drcpped.	Avaram bark.	Sale dropped.	Avaram bark.	SaleS drcpped.
3. Tambaram Range	M.F.P.	Not available.	M.F.P.	Sale dropped.	M.F.P.	Not availabel.	M.F.P.	Not furnished.	M.F.P.	Sale dropped
4. Kelambakkam Range	M.F.P.	Sale dropped.	M.F.P.	Sale dropped.	M.F.P.	Sale dropped.	M.F.P.	Palmyrah leaves.	I.C.L. of	M.F.P. droppeed.
5. Chingleput Range	M.F.P.	Not furnished.	M.F.P.	Sale dropped.	M.F.P.	Sale dropped.	M.F.P.	50 Kg. Tamarind.	M.F.P.	Sale dropped.
6, Madurantakam Range	M.F.P.	Not furnished.	M. F.P.	Sale dropped.	M.F.P.	Sale dropped.	M.F.P.	Not furnished.	M.F.P.	Sale dropped

SECTION 5—PAST REVENUE AND EXPENDITURE

270. The summaries of revenue and expenditure in the division from 1966-67 to 1975-76 are exhibited in the following statements ; —

SUMMARY OF REVENUE REALISED IN CHINGLEPUT DIVISION FROM 1966-67 TO 1975-76.

	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1 **Forest receipts**	.	..	..	.	..	..	..		113(*a*) **Forest receipts.**	.
(*a*) Sandal wood	..	10 50	164 30	..	.	17 60	8,674 57	59,289 25	62,021 00	.
(*b*) 1. Timber and other produce removed from the forest by consumers and purchasers.	..	27 00	654 00	..	..	..	..	..	..	11,050 00
2 **Grazing and Fodder grass**	214 25	152 25	140 75	242 75	236 00	269 00	33 00	..	30,578 00	33,074 50
3 **Fire wood and charcoal**	..	1,094 00	2,722 25	..	1,803 80	14,559 45	.	561 00	4,544 00	35 00
4 **Other Minor Forest Products**	..	..	..	.	60 00	.	.	.	1,37,798 00	89,480 00
(*c*) **Drift and waif wood and confiscated Forest Produce.**	5 66	.	2 45	40 88	61 71	36 82	44 94	121 30	18 53	11 70
(*d*) **Receipt from the management of Ex-Zamin Forests.**	2,069 35	640 00	8 00	3,325 25	892 50	6,651 60	1,101 00	..	..	.
(*e*) **Miscellaneous :** –										
(i) **Fines and Forfeitures**	.	0 50	1,480 50	2,754 25	2,693 40	3,553 00	6,830 85	5,821 85	.	..
(ii) **Rent on buildings**	3 50	20 20	3,271 65	3,347 90	3,419 63	2,055 05	2,835 90	3,790 85	..	..
(iii) **Other Sources**	3,610 23	2,443 78	4,657 71	4,985 13	8,377 47	24,203 33	21,065 05	30,109 25	..	..
(iv) **Receipts from Development schemes-Other receipts-Panchayat forests managed by Government.**	2,44,311 50	2,26,606 05	2,20,369 52	2,74,520 01	4,03,496 47	7,59,770 48	7,98,013 87	1,30,9895 85	..	
Grand Total	2,50,214 49	2,31,804 28	2,33,481 13	2,89,216 17	42,0,880 98	8,11,175 73	8,38,599 18	1,40,9589 35	..	
Deduct **Refunds by Forest Office**	483 57	2,790·65	19·74	144·88	1,934·76	3,062·09	1,555·00	8524·00	..	..
Net receipts	2,49,730·92	2,29,013·63	2,33,461·39	2,89,071·29	4,18,946·22	8,08,113·64	8,37,044·18	1,40,9065·35	..	..
Deduct amount relating to other **Divisons**	3,559·23									
	2,46,171·69									

SUMMARY OF REVENUE REALISED IN CHINGLEPAT DIVISION FROM 1966–67 TO 1975–76.

(1)	1967–67 (2)	1969–68 (3)	1968–69 (4)	1969–70 (5)	1970–71 (6)	1971–12 (7)	1972–73 (8)	1973–74 (9)	1974–75 (10)	1975–76 (11)
13 (a) Receipt from Forest plantations:—									o Receipts frm Forest Plantation	
4 Cashew	..	..	..	..	..	..	..	..	1067 851.47	337227
6. Casuarna	..	..	..	..	..	..	..	..	16.00	5,742.00
9. Eucalyptus Hybrid	..	..	..	..	..	..	..	..	70570.00	4,50,921.85
10 Minor Forest Produce	..	..	..	..	..	..	..	..	2283095	..
113 (c) Farm Forestries	..	..	..	..	..	..	..	..	312,023.79	320.00
113 (f) Other expenses—										
1 Fires and Forfetures	..	..	..	..	..	..	..	..	10289.40	3661.00
2. Rent or buildings	..	..	..	..	..	..	..	..	4 '335.50	3,736.80
6. Miscellaneous	..	..	..	..	..	..	..	..	7938070	6788493
									19,02258.15	10,05,614.28
Deduct Refund								..	5,832.59	2,10,264.84
									18,96,425.56	994,976.44
Deduct Reevenue relating to otoer Division									1,653.11	1,296.12

SUMMARY OF EXPENDITURE INCURRED IN CHINGLEPUT DIVISION FROM 1966–67 TO 1975–76.

Budget head of account. (1)	1966–67 (2)	1967–68 (3)	1968–69 (4)	1969–70 (5)	1970–71 (6)	1971–72 (7)	1972–73 (8)	1973–74 (9)	1974–75 (10)	1975–76 (11)	[illegible]
I. *Works* ;											
70 Forests Conservation and Development—											head of account was changed to 313 orest Conservation and Dvelopment in 1974-75
(b) Conservancy and works B. Timber and other produce removed from the forests by consumers and purchasers.						455.00					
(ii) Timber and other produce removed from the forests.	..	..	..	200.00	31.24	80.50	..	47.00	..	..	....
(C) Maintenance, repairs and renewals;—											
(1) Maintenance	..	..	..	..	..	..	..	..	554.40	..	....
(2) Renewals of replacement of stores, tools and platÆs	..	1,355.35	2,822.50	5,058·50	2,961.23	1,003·43	96.76	415.41	..	..	....
(3) Expenditure on establishment for the adoption of metric system of weights and measures.	1,029.18	272.44	348.14	870.35	Nil	Nil	27.50	..	..	..	....
(D) Communication and Buildings ;											
(1) Roads	..	..	..	..	..	..	..	..	..	..	....
(2) Buildings and other works (Maintenance);	..	40.00	50.00	26.10	Nil	Nil	..	..	3,365'65	4,508'00	....

Budget head of account.	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(E) Conservancy and Regeneration—											
(1) Regeneration	1,201.65	..	..	..	1,46,404.80	..	..	3,319.05	35,282.70	8,[illegible]2.5	....
(2) Other works—Maintenance of boundaries	..	..	..	373·75	200·00	133·00	..	..	..	..	....
(G) Scheme financed wholly by the State Government—Panchayat forests managed by Government works	8,024.79	16,807.58	34,646.64	36,595.33	1,42,066.39	2,3753.92	62,121.52	34,991.63	27,945.50	22,[illegible]	....
(J) Other charges	..	..	69.20	..	..	411.60	Nil	520.50	3,183.85	[illegible],068.3[illegible]	..
1 Honoraria	..	..	..	..	..	..	..	..	..	2,575.00	....
2 Minor works	..	..	..	..	..	..	..	..	283.00	566.00	..
K. Suspense works advances ..	..	..	..	..	..	300·00	..	..	..	(a) 1,500·00	
Total debits	1,9,00.00	3,080·00	750·00	300·00	150·00	735·00	Nil	..			
Total credits (–)	4,955·91	2,243·75	894·00	872·95	300·00	..	..	..	..		
Total	7,555·97	18,311·62	37,792·48	42 550·88	2,91,347·96	25,398·50	62,245·78	33,293·51	..		
(e) Development Schemes :—											
(ii) Scheme in the Fourth A.											
B. Schemes for Cashew cultivatioin Forest areas (4) works.	16,916·87	39,278·30	16,146·66	..	..	..					
N. Schemes for labour and staff aminities.	..	2,448.36	15,949·56	..	..	..		..			
O. Soil Conservation. Afforestation of dry fuel forests (4) works.	22,649·58	..	..	..	..	..					
ZD. Schemes for package programme of Cashew in forest areas.	..	..	..	..	..						

119.										
(a) Organisation. Improvement and extension of forests.										
1. orks	..	..	..	..	..		..	..		
Farm forestry	49,779·36	30 208·45	28,588·68	45,861·61	41,437·13	45,791·66	38,145·25	30,945·40		
Cashew cultivation	12,760·82	.	57,390·56	..	..	..	..	.		
Scheme for raising fuel ..	52,923·86	9·90	..	22, 484·19	1,372·50	..	..			
Scheme for soil conservation AfforestationsofDryfuel forests.	2,242·00	..	..	4 435·69	4,591·09	3,575·96	938·83		..	
119 (d) Development schemes (ii) schemes in rhe Fourth Five year Plan.										
1 Village Forests	52,028·92	68,582·50	69,220·55	88,221·61	60,005·35	49,023·30	66,912·71	79,063·14	83,257·04	224,382·58
2 Schemes for teak plantation	..	..	..	..	38,482·27	34,872·48	61,241·27	93,597·48	23,965·17	1 22,993·94
4 Schemes for casuarina plantation.	5,068·15	1,722·00	46·05	..	..	3,817·67	23,674·25	37,878·55	..	..
6 Schemes for river canal and lake finge forests.	..	..	..	..	..	12,755·97	34,562·00	21,869·25	7,096·95	2,356·50
2 Nature conservation	3,975·00	..	..	..	..	..	..	..	1,204·40	Nil
9 Schemes for constructions of buildings.	3,234·18	..	..	..	..	20,059·59	78·40	19,624·95	3,686·93	7,417·75
11 Schemes for quick growing species.	484·72	1 001,29·71	88,518·92	71,326·09	48,478·17	23,606·00	22,266·25	51 492·75	..	..
12 Schemes for fuel wood plantation.	2,09,442·62	225,965·03	19,434·18	73,538·17	80,424·88	51,070·32	44,496·52	74,562·52	150,652·15	193,504·93
Schemes for pulp wood plantation.	..	..	..	..	..	..	..	..	3,660,80	2,600.00
Schemes for minor forest produce plantation.	..	..	..	..	..	..	2537·85	545.65	.	1.350·50
13 entrally sponsored. 5 Schemes for cashew cultivation.	..	29.817.05	..	3,63,851'04	3,69,750·00	2,55,891·05	..	2,042,239.21	2.69,421·29	1,44,922.88

Budget head of account.	16	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Nature Conservation and preservation of life.	..	..	..	..	..	..	..	1,972.57	..	..	
Forest Production	..	..	..	..	..	..	..	931.65	..	..	
Labour and staff aminities .	..	..	..	..	..	..	..	7,246.45	104.66	..	
Forest consolidation. ..	..	..	..	..	..	..	..	1,784.55	3,241 85	672.00	
35 Scheme for cashew cultivation	..	..	..	..	..	..	2,09,204·30	..	..	..	
7 Scheme for special package programme.	7 Scheme for specials paegkac			..	..	..	2,74,249 07	2,80,999·25	1,55,380·35	..	
8 Schemes for area expansion ..	..	..	.	..	..	50.723 40	96·290·25	10.463·17	..	..	
70 Forests Development Schemes in the IV F.Y.P. II. Centrally sponsored scheme for adoption of plant production measures in Departmnet Cashew plantation.	..	..	..	..	14,6790·00	59,273·80	35,381·10	35.381·10	18,398.80	..	
II. ESTABLISHMENT.											
70 Forests-C Establishment ;											
A. District Establishment											
7 Pay of officers . .	9,960·00	15,167·10	20,432·85	18,331·30	127 722·35	227,423·65	2,22,725·27	2,40.464·95	4,13,439·80	392,773·90	The head of accountwas change 373 (*a*) Direction and Administration.
2 Pay of other esrablishment .	55,286·45	99,18 924	90.253·25	95,020·05	.						
Dearness pay	..	..	..	..	..	..	..	..	9,842·95	1 06 111·90	..
3. Allowances—											
(i) Dearness allowance ..	30,473·70	67,032·16	81,652·30	87,106·10	86,496·15	18,591·59	27,929·10	44,95085	107,788·15	..	..
Family Benefit Fund ..	..	..	..	..	..	..	..	..	3,160·00	430·00	..
(ii) Travelling allowance ..	9,346·65	13,662·54	13,141·59	13,258·15	15,635·65	36,614·47	30,297·20	29,995·80	41,881·15	74,498·50	..
Additional Dearness allowance	.:	..	..	..	..	..	..	..	3,373·35	51,766·90	..

(iii) Other allowances—												
F. T. A.	2,407·05											
C C. A.	2,153·55	15 008·00	17,993·10	19,632·73	29,174·65	26,802 89	24,213·50	30,139·65	61,929·40	53,957·35	..	
Medical Charges	490·36	..	..	..	..	..	685·80	762·40	3,863·85	4,231·70		
Contingent Fund	..	..	..	..	..	..	112·35	..	..	..		
Office Contingencies—												
(i) Office Expenditure	2,627·92	3,695·88	4,394·46	7,094·90	9,292·54	4,632·74	4,335·46	5,029·04	23,271·19	6,306·46	..	
(ii) Cost of Staff	..	..	..	..	..	..	1,085·25	1,323·10	..	..		
5. Motor Vehicles-Maintenance Charges	17,215·66	31,313·09	27,799·70	24,626·17	62,256·05	94,265·82	66,503·25	64,255·73	57.0(9·67	73,22·58		
G. Scheme financed wholly by State Government Panchayat Forests managed by Government.												
1. Pay of Establishment	78,893·46	77,355·45	78,477·45	80,937·72	85,635·35	1,80,529·10	1,61,757·80	1,90,094·30	..	..	..	
2. Allowances—												
(i) Dearness Allowances	46,690·31	55,420·45	79,671·35	83,862·74	79,409·10	16,218·79	22,562·30	40,446·75	..	..	..	
(ii) Travelling Allowances	3,661·41	3,726·80	5,871·27	5,233·55	7,248·80	15,506·65	13,045·70	14,880·00	..	..	..	
(iii) Other Allowances ;	3,995·20	7422·90	5,654·55	6,104·79	18,050·90	21,762·34	22.870·60	25,920·70	..	..	..	
(iv) Contingent Fund		..	..	..	..	..	196·00	..	..	..	..	
(v) Medical Charges	16·31	..	..	..	..	..	1,140.45	1,338·55	..	..	..	
3. Office Contingencies	13,405·28	15,204·27	15,206·54	12,741·25	15,497·84	14,380·84	15,382·85	18,535·08	..	..	..	
70. (C) Establishment under Plan Schemes.												
ZB. Raising of Fuel Trees:—												
1 Pay of Officers	2,839·15	..	..	..	..	..	..	..	..	..	..	
2. Pay of Estblishment ..	20,266·75	..	..	..	..	..	..	..	..	..	..	
3. Allowances												
(i) D.A.	12,429.15	..	..	..	..	..	..	..	..	..	..	..
(ii) T.A.	3,105.00	..	..	..	..	..	..	..	..	..	..	..
(iii) F.T.A. ..	511.50	..	..	..	..	..	..	..	..	..	..	..
(iv) O.C.A. ..	1,511.75	..	..	..	..	..	..	..	..	..	..	..

Budget head of account. (1)		1966-67 (2)	1967-68 (3)	1968-69 (4)	1969-70 (5)	1970-71 (6)	1971-72 (7)	1972-73 (8)	1973-74 (9)	1974-75 (10)	1975-76 (11)	
4 Office contingencies.	150.03	..	..	..	..	..	..	..	..	..	..	
5. Motor Vehicles Maintenance.	8,169.50	..	..	..	..	..	..	..	..	..	..	
70 (c) Farm Forestry Scheme—												
1. Pay of Establishment.	29,583.85	..	..	..	..	..	..	..	..	..	..	..
2. Allowances—												
(a) D.A. ..	16,690.20	..	..	..	..	..	..	..	..	..	..	..
(b) T.A. ..	3,092.48	..	..	..	..	..	..	..	..	..	..	..
(c) F.T.A. ..	1,997.60	..	..	..	..	..	..	..	..	..	..	..
(d) O.C.A. ..	151.95	..	..	..	..	..	..	..	..	..	..	..
3. **Office** contingencies.	734.21	..	..	..	..	..	..	..	..	..	..	..
0. Forest(e)Development Schemes: Schemes in the Fourth Five Year Plan State Schemes—Schemes for forest consolidation.												
1. Cost of personnel salaries.	..	..	..	..	..	..	4,450.00	12,902.75		13,858.00	13,698.85	..
Dearness pay ..	..	..	..	..	..	..	..	..		235.00	2,745.65	..
Dearness Allowance.	..	..	..	..	..	..	485.00	2,128.40		2,705.00	..	..
Additional Dearness Allowance.	..	..	..	..	..	..	..	..		80.10	1,604.30	..

Travelling Allowance.	..	..	..	..	..	..		7.65	2,448.30	3,226.00	
Family Benefit Fund.	..	..	..	..	..	..		..	..	80.00	..
Office expenses.	..	..	..	..	..	..	..	..	825.00	825.00	..
Other allowances.	..	..	..	..	..	..	245.20	648.55	456.40	698.95	..
2. Contingencies—											
Works expenditure	..	..	..	..	..	..	1,163.06	..	..	..	..
Total ..	8,14,863.83	[illegible],56,025.90	10,70,859.89	1,66,218.9	19,49,682.13	15,45,064.74	16,07,038.87	15,75,313.62	14,83 313.65	16,05,956.66	

271. The statement showing the financial position of the division from 1966-67 to 1975-76 is furnished below. The division showed a surplus only in 1974-75.

STATEMENT SHOWING THE FINANCIAL POSITION OF THE DIVISION FROM 1966-67 TO 1975-76.

Financial year.	*Revenue realised in rupees.*	*Expenditure incurred in rupees.*	*Surplus in rupees.*	*Deficit in rupees.*
1)	(2)	(3)	(4)	(5)
1966-67	2,46,172.00	8,14,864.00	.	5,68,692.00
1967-68	2,29,014.00	9,56,026.00	..	7,27,012.00
1968-69	2,33,461.00	10,70,860·00	..	8,37,399·00
1969-70	2,89,071.00	11,66,219.00	..	8,77,148.00
1970-71	4,18,946.00	19,49,682.00	..	15,30,736·00
1971-72	8,08,114.00	15,45,065.00	..	7,36,951.00
1972-73	8,37,044.00	16,07,039·00	..	7,69,995,00
1973-74	14,09,065·00	15,75,314·00	-	1,66,249.00
1974-75	18,94,772.00	14,83,314.00	4,11,,458,00	-
1975-76	7,93,680.00	16,05,956.00	..	8,12,277,00

SECTION—6 MISCELLANEOUS

272. A list of machanical equipment including vehicles in the division as on 31st March 1976 is furnished in the subjoined statement ;—

LIST OF MECHANICAL EQUIPMENT INCLUDING VEHICLES IN THE DIVISION AS ON 31ST MARCH 1976

Serial number. (1)	Year of purchase. (2)	Description of equipment. (3)	Number. (4)	Capital cost in rupees. (5)	Authority for purchase. (6)	Present conditio (7)
1	1959	Mahindra and Mahindra Jeep trailer— M.D.H. 2489	1	1,378.00	G.O. Ms. No. 2950, Food and Agriculture, dated 25th August 1958.	Serviceable.
2	1963	Fargo Lorry 165" wheel base—diesel Chasis-MSU 7919	1	39,625.12	G. O. 1026, Food and Agriculture dated 20th March 1963.	Do.
3	1963	International tracror-Model 460—D.MDH 3493	1	27,576.41	G. O. Ms. No.1801 Food and Agriculture, dated 3rd May 1963.	Under repair.
4	1964	C-100 Russian bulldozer—MSS 1409	1	88,475.80	G. O. Ms. No.1992, Food and Agricultute, dated 30th June 1964.	Do.
5	1966	Willys jeep—MSR 1581 and trailer MSR 5066	1	18,636.95	G.O. Ms. No. 1854, Food and Agriculture, dated 12th May 1965.	Serviceable
6	1967	Allis chalmer rawler tractor-HD 6-B— S. No. 19215	1	1,18,258.27	G.O. Ms. No. 1264, Foodand Agriculture, dated 16th April 1964	Do.
7	1968	Escort 37 tractor—MSQ 2918	1	18,600.00	Chief conservator' No. 33381/66-31, dated 7th December 1966.	. . .
8	1968	Escort 37 tractor-MDF 4754	1	18,600.00	G. O Ms. No. 1455 Food and Agriculture, dated 21st May 1967.	Under repair.
9	1970	Crawler tracror-Model TD6	1	65,900.00	Transferred from Cuddalore Division as per Chief Conservator' S. No. 21370/70-H4, dated 7th November 1970.	Serviceable.
10	1973	Willys Universal jeep TMZ 2841	1	22,335.19	G. O. Ms. No. 172, Agriculture dated 25rh January 1973.	Do.
11	1961	Pumpset at Kattankolathur.	1	5,500.00	Not available	Serviceable.
12	1962	Russel Newberry oil engine No. 10 -F 5343-7/10 H.P. coupled with 4" X3" PSQ pump at Navalur nursery.	1	3,587.50	Do.	Do.
13	1964	Russel Newburry oil engine No.10 -F 5057— Coupled with P.S .G. pump size 4" X 3" and mounted on four wheel trolly at Mambakkam.	1	1,325.78	Do.	Do.
14	1964	Russel New burry oil engine No. 10 -F 6155 coupled with P.S .G. pump size 4" X 3" and mounted on four wheel trolly at Kattugudalur.	1	1,162.25	Do.	Do.
15	1968	Half H.P. Single motor— AC. motor No. 6114-240 Volts-Phase 1'50 H.D. 5-A— 4-5 RPM 1425— Domestic pump 1 x 1 inch,	1	575.00	Do.	Do.

273. The list of District Forest Officers who held cherge of the division is furnished in the statement given below ;—

LIST OF OFFICERS WHO HELD CHARGE OF CHINGLEPUT DIVISION.

Serial number and name. (1)	*From.* (2)	*To.* (3)
1 Thiru M. R. Doraiswamy Iyer ..	16th July 1945	31st March 1947.
2 Thiru Chathu Nayar	1st April 1947	21st June 1947.
3 Thiru N. Thirumoorthy I.F.S. ..	22nd June 1947	4th November 1948.
4 Thiru Vridhachalam Pillai ..	5th November 1948	14th June 1950.
5 Thiru Mohmood Hussain ..	15th June 1950	26th August 1952.
6 Thiru B. A. Cariappa	27th August 1952	4th February 1954.
7 Thiru N. Ramakrishnan	5th February 1954	6th February 1954.
8 Thiru K. P. D. Rao	7th February 1954	14th March 1954.
9 Thiru V. S. Krishnaswamy, I.F.S.	15th March 1954	2nd April 1954.
10 Thiru K. P. D. Rao . ..	3rd April 1954	27th December 1954.
11 Thiru N. Ramakrishnan	28th December 1954	30th January 1955.
12 Thiru K. P. D. Rao	31st January 1955	30th September 1955.
13 Thiru K. R. Radhakrishnan ..	1st October 1956	8th October 1957.
14 Thiru M. Ansar Badshah	9th October 1957	15th April 1959
15 Thiru N. Ramakrishnan	16th April 1959	9th March 1963.
16 Thiru M. Ansar Badshah ..	10th March 1963	26th April 1963.
17 Thiru G. M. A. Quraishi	27th April 1963	24th July 1967.
18 Thiru K. Durairaj, I.F.S. . .	25th July 1967	23rd December 1967.
19 Thiru M. Dhinakaran, I.F.S. .	24th December 1967	15th January 1968.
20 Thiru K. Durairaj, I.F.S.	16th January 1968	16th June 1971.
21 Thiru K. Viswanathan, I.F.S. ..	17th June 1971	17th January 1974.
22. Thiru A. M. Tholamani Devar, I.F.S.	18th January 1974	31st March 1974.
23 Thiru P. K. Ponnusamy, I.F.S. ..	1st April 1976.	Till to-date.

CHAPTER VI—STATISTICS OF GROWTH AND YIELD.

SECTION I—STATISTICS RELATING TO CASHEW.

274. *Determination of rotation.*—A study of the yield figures of raw nuts was carried out to determine the age at which the yield of Cashew starts falling with a view to deciding on the rotation to be fixed for the species. For this purpose the figures of yield obtained from departmental collection (1971 to 1975) alone were taken into consideration as they were considered to be adequate and the only reliable figures available. To start with, the average yield per hectare from plantations of ages 11 to 30 years exploited during each of the five years was woeked out. Thereafter, the average annual viels for plantations of the same age during the fice year period was worked out. The results of the study are furnished in the subjoined statement. They generally show that there is a sharp fall in yield in the 20th year but then the figures from ages 20 to 30 cannot be considered as representatives as they pertain to just one or two plantations. A further study at the end of the current plan would be necessary before a firm decision could be arrived at regarding the rotation to be fixed for Cashew.

STATEMENT SHOWING THE AVERAGE YIELD OF RAW NUTS PER HECTARE PER ANNUM FROM CASHEW PLANTATIONS OF THE SAME AGE EXPLOITED DURING THE PERIOD 1971—1975

Yield per Hectare in Kilograms.

Year (Season).	11 *Years.*	12 *Years.*	13 *Years.*	14 *Years.*	15 *Years.*	16 *Years.*	17 *Years.*	18 *Years.*	19 *Years.*	20 *Years.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1971	3·91	12·48	23·40	31·35	33·97	..	0.17	6·84	..	..
1972	6·63	7·90	20·76	38·34	41·46	32·49	..	0.35	4·77	..
1973	..	..	8·99	20·47	37·17	32·13	20·44	..	0·44	3·76
1974	..	..	..	10·51	23·68	43·93	34·42	19·36	..	0·83
1975	..		..	..	5·44	8·91	21·86	14·46	10·55	..
Total ..	10·54	20·38	53·15	100·67	141·72	117·46	76·89	41·01	15·76	4·59
Average yield per hectare per annum.	5·27	10·19	17·73	25·17	28·34	29·37	19·22	10·25	5·25	2·26

IInd Rolling Col. Nos. (12) to 21.

Yield per Hectare in kilograms.

Year (Season).	21 *Years.*	22 *Years.*	23 *Years.*	24 *Years.*	25 *Years.*	26 *Years.*	27 *Years.*	28 *Years.*	29 *Years.*	30 *Years.*
(1)-cont.	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1971	..	..	..	220·00	..	35·53	..	..	..	..
1972	..	..	..	..	23·75	..	80·17	..	..	..
1973	..	..	..	..	..	207·50	..	53·72	..	..
1974	0·87	..	..	..	..	..	55·00	..	9·09	
1975	0·32	0·61	..	..	..	..	..	2·50	..	7·44
Total ..	1·19	0·61	..	220·00	23.75	243·03	135·17	56·22	9·09	7·44
Average yield per hectare per annum.	0·59	0.61	..	220·00	23·75	121·52	67·59	28·11	9·09	7·44

275. *Soil analysis.*—Two samples of soil, one from an area of good growth and the other from an area of poor growth in the 1957 Siruvanjur Cashew plantation of Chingleput Range were gathered and got analysed at the Soil Testing Laboratory at Kajamalai, Tiruchirappalli. The results are furnished below:—

Area	Texture	Lime	pH	E.C.	N	P	K
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Good growth	..S.L.	N	6.2	0.08	82.68	15.84	31.50
			NL.	HS	L	H	L
Poor growth	.. S.L.	B	6.8	0.08	63.60	12.76	45.00
			NL.	HS.	L	H	L

Details of abbreviations used:
Texture — S.L.: Sandy loam.
Lime status — N : Nil.
pH. — NL: Normal.
E.C.. — Electrical Conductivity.

E.C. — HS: Harmless.
Available N.P.K. — L: Low.
M: Medium.
H: High.

SECTION 2 — STATISTICS RELATING TO EUCALYPTUS TERETICORNIS.

276. *Rotation*—The rotation was fixed at eight years in Chief Conservator of Forests reference No. 17466/73 L1, dated 25th August 1973.

277. *Coppicing vigour*—In order to determine the coppicing vigour of first rotation Eucalyptus tereticornis plantations in relation to the rotation a ten per cent systematic line sampling was carried out in six plantations felled at rotation age of eight, nine and ten years. The results, which have been reproduced in the statement given below, indicate that coppicing vigour is highest in a nine year rotation, and least in an eight year rotation. Coppicing vigour is one of the factors that influence yield which in turn will decide the time of replanting.

The sampling also disclosed that original failures were as high as 71-70 per cent on an average. The main reason for this, however, is site un suitability more than anything else.

STATEMENT SHOWING THE YIELD OF EUCALYPTUS FUEL WOOD FROM EUCALYPTUS WORKING CIRCLE.

Year of felling.	Name and year of plantation.	Area in hectares.	Total yield in tonne.	Yield per hectare in tonne.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)
	1. TIRUVALLUR RANGE.				
1971–72	Panchali 1961	9.50	30.00	3.16	
1973–74	Panchali 1962	89.00	84.97	0.96	
	Peddapullur 1962	8.10	12.52	1.54	
	Panchali 1963	30.80	16.36	0.53	
	Peddapullr 1963	101.20	46.50	0.46	
1974–75	Peddapullur	63.13	226.79	3.59	
		Bark.	10.00	0.16	
	E.V.Palayam 1964	4.04	32.66	8.08	
	Palavakkam 1964	41.28	87.90	2.13	
		Bark.	14.00	0.34	
	Palavakkam 1965	21.60	212.84	9.86	
		Bark.	15.00	0.69	
	Nemalur 1965	22.30	28.03	1.26	
		Bark.	5.00	0.22	
	Mailapore 1965	20.60	96.67	4.69	
	Palavakkam 1963	30.40	8.26	0.28	
	Mailapore 1966	30.00	106.78	3.56	
	Nemalur 1966	22.30	7.85	0.36	
	Siruvada 1966	20.60	4.02	0.19	
	Palavakkam 1966	21.50	5.35	0.24	
	Allikuli 1965	20.60	2.00	0.09	
	Siruvada 1965	29.50	10.00	0.33	
1975–76	Palavakkam 1966	21.50	30.21	1.41	
	Vengal 1967	38.30	8.66	0.23	
	2. TAMBARAM RANGE.				
1968–69	Gudalur 1957	3.95	25.00	6.33	
1971–72	Vandalur 1959	8.90	37.50	9.20	
	Mannur 1957	4.10	3.00	0.73	
	Mannur 1958	4.10	3.00	0.73	
	Mannur 1959	8.10	4.00	0.49	
	Mannur 1960	9.40	5.00	0.53	
	Gudalur 1959	4.10	10.00	2.43	
	Guadalur 1960	4.40	21.00	4.78	
	Gudalur 1961	7.30	27.00	3.69	
	Mannur 1961	7.80	4.00	0.51	
	Nanmangalam 1961	7.90	43.00	3.44	

Year of falling	*Name and year of plantation.*	*Area in hectares.*	*Total yield in tonne.*	*Yield per hectare. in tonne*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)
1973-74	Gudalur 1962	6.50	9.18	1.41	
	Mannur 1962	8.10	1.00	0.12	
	Nanmangalam 1962	49.80	107.61	2.16	
1974-75	Gudalur 19[illegible]3	4.00	1[illegible].38	4.95	
	Maganiam 1963	23.50	119.74	5.09	
	Vattambakkam 1963	29.50	108.11	3.66	
	Nanmangalam 1964	8.90	64.46	7.24	
	Maduraipakkam 1964	21.04	262.39	4.16	
	Vandalur 1965	21.00	3[illegible]4.10	15.90	
	Nanmangalam 1965	21.00	20.09	0.96	
	Vettambakkam 1965	19.40	178.18	9.19	
	Vadakkupattu 1965	29.90	76.86	2.58	
1974-75	Vattambakkam 1966	40.50	48.63	0.86	
	Vattambakkam 1963	29.50	45.79	2.58	
	Vadakkupattu 1966	19.00	13.99	0.73	
1975-76	Vattambakkam 1966	40.50	3[illegible].56	0.86	
	Vandalur 1966	19.20	150.99	7.86	
	Maduraipakkam 1966	40.50	148.54	3.67	
	3. KELAMBAKKAM RANGE.				
1973-74	Tirutheri 1962	8.10	5.00	0.62	
	Sirukundram 1963	8.10	4.57	0.56	
	Tirutheri 1963	23.90	20.00	0.83	
	Thaiyur 1963	60.70	602.90	0.99	
1973-74	Mambakkam 1964	15.30 Bark.	13.76 2.25	0.90 0.15	....
	Mambakkam 1960	4.00	9.64	2.41	....
1974-75	Tirutheri 1964	8.90	12.00	0.11	....
	Vallam Bit I and II 1964	22.23	1.00	0.04	....
	Sengundram 1965	20.20	18.05	0.89	....
		Bark.	10.00	0.49	....
	Mambakkam 1965	20.20	31.82	1.58	..
		Bark.	4.50	0.22	
	Thaiyur 1963	60.70	4.57	0.07	Arrear
	Thaiyur 1965	20.20	22.86	1.13	..
		Bark.	2.50	0.12	..
	Mambakkam 1966	19.80	29.36	1.49	..
		Bark.	9.00	0.46	
	Kolathur 1966	20.20	6.76	0.33	..
		Bark.	6.50	0.32	
1975-76	Sengundram 1966	23.10	8.66	0.38	..

Year of falling. (1)	*Name and year of plantation.* (2)		*Area in hectares.* (3)	*Total yield in tonne.* (4)	*Yield per hectare in tonne.* (5)	*Remarks* (6)
	4. Chingleput Range.					
1968-69	**Paranur**	1958	5.79	55.75	9.63	..
1971-72	**Paranur**	1959	7.69	31.00	4.03	..
	Tirukalikundram	1960	7.50	83.50	11.13	..
1972-73	Tirukalikundram	1961	8.10	68.20	8.42	..
	Tirukalikundram	1962	8.09	68.20	8.42	..
	Tirukalikundram	1963	8.50	58.04	6.81	..
1973-74	Hanumanthaputheri	1962	2.00	41.50	2.08	..
	Hanumanthaputheri	1963	4.10	67.25	16.40	..
	Kattankolathur	1963	8.00	75.50	9.43	..
1974-75	Hanumanthaputheri	1964	2.02	25.00	12.38	..
	Kattankolathur	1964	8.10	38.71	4.78	..
			Bark.	63.00	0.37	
	Edamachi	1964	37.63	45.83	1.21	..
			Bark.	7.50	0.19	
1974-75	Tirukalikundram	1964	16.12	87.96	5.29	..
	Kaveripakkam	1965	22.70	98.87	4.36	..
			Bark.	7.00	0.30	
	Kattankolathur	1965	4.10	8.77	2.13	..
			Bark.	2.50	0.60	
	Tirukalikundram	1965	28.00	183.84	6.57	..
			Bark.	13.00	0.46	..
	Appur Bit I and II	1966	39.10	175.33	4.49	..
	Salur	1966	30.40	360.25	11.86	..
1975-76	Appur	1966	39.10	4.30	0.10	..
	Salur	1967	37.20	198.56	5.33	..
	Thirumani	1967	11.30	102.640	9.24	..
	5. Madurantakam Range.					
1970-71	Thottacheri	1963	7.61	70.00	9.20	..
1971-72	Alathur	1958	2.02	24.50	12.12	..
	Kattur	1961	7.70	36.50	4.74	..
1972-73	Thandalam	1962	10.20	95.90	9.40	..
1973-74	Kattur	1962	7.70	45.00	5.84	..
	Thandalam	1962	10.00	25.00	2.50	..
	Kattugudalur	1962	41.30	19.54	0.47	..
	Thottacheri	1962	40.50	420.66	10.39	..
	Thottacheri	1963	73.30	885.76	12.08	..
	Kattur	1963	20.20	108.00	5.34	..
	Kattugudalur	1963	74.80	40.48	0.54	..

Year of falling.	Name and year of plantation.		Area in hectares.	Total yield in tonne.	Yield per hectare in tonue.	Remarks.
(1)	(2)		(3)	(4)	(5)	(6)
1974-75	Kattur	1964	20.23	271.78	13.43	
			Bark.	13.63	0.67	..
	Alathur	1964	21.85	220.09	10.07	..
			Bark.	20.00	0.91	..
	Acharapakkam	1964	4.04	1.75	0.43	..
	Kattugudalur	1964	4.04	1.20	0.29	..
	Thottacheri	1964	80.94	1,423.68	17.59	..
			Bark.	32.00	0.39	..
	Kattur Bit I and II	1965	14.10	79.44	5.63	..
			Bark.	7.00	0.49	..
1974-75	Thandalam	1965	30.45	290.63	9.56	..
			Bark.	33.50	1.10	
	Rajapalayam	1965	20.20	89.00	4.40	..
			Bark.	7.30	0.36	
	Thottacheri	1965	40.50	808.63	19.97	..
			Bark.	16.00	0.39	..
	Chittarkadu	1965	19.40	18.50	0.96	..
	Kattur	1966	35.60	150.50	4.22	..
			Bark.	20.25	0.57	
	Thandalam	1966	39·70	199.99	5.03	..
1975-66	Rajapalayam	1966	40·50	24.15	0.59	..
	Thottacheri	1966	17.00	165.69	9.74	
	Illalur	1967	18.50	381.32	20.61	..
	Kattur	1967	26.30	124.65	4.73	..

STATEMENT SHOWING THE RESULTS OF 10 PER CENT SYSTEMATIC LINE SAMPLING IN EUCALYPTUS TERETICORNIS PLANTATIONS WORKED ON DIFFERENT ROTATIONS.

Serial number and name of Range.	*Name and year of plantations.*	*Year of felling.*	*Age at felling.*	*Percentage of stumps that have coppiced in relation to original survival.*	*Average of figures in column 5.*	*Percentage of stumps that have failed to coppice in relation to original survivals.*	*Percentage of original failures.*	*Average of figures in column 8.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1 Chingleput	Hanumanthaputheri 1963	1973	10 years.	82.21	90.86	17.79	72.33	71.70
2 Kelambakkam	Sirukundram 1963	1973	10 years.	99.51		0.49	79.19	
3 Kelambakkam	Sengundram 1965	1974	9 years.	95.14	95.84	4.86	81.46	
4 Kelambakkam	Sengundram 1966	1975	9 years.	96.53		3.47	86.94	
Madurantakam	Illalur 1967	1976	8 years.	90.82	75.36	9.18	47.77	
6 Chingleput	Tirumani 1967	1976	8 years.	59.89		40.11	62.54	

SECTION 3 – STATISTICS RELATING TO RED SANDERS.

278. *Distribution of girth classes and mean annual increment in the Mailapore plantations.*– A ten percent line sampling in 15 cm. girth classes of the growing stock in the successful older Red Sanders plantations in Mailapore R.F. was undertaken with a view to study the is girth wise composition and also to determine the mean annual increment with a view to securing some indication of the probable rotation for the species The results of the exercise carried out are furnished in the subjoined statement. Taking the figures for the oldest plantation viz, Mylapore 1958 which are the most relevant, it is seen that the predominant girth classes are 30–45 cm and 45–60 cm. and that the mean annual diameter increment, of these girth classes works out to 0.86 cm. At this rate of increment it would require 37 years to attain a diameter of 31.83 cm. corresponding to an exploitable girth of 100 cm. at B.H.

STATEMENT DEPICTING RESULTS OF TEN PERCENT LINE SAMPLING IN THE OLDER RED SANDERS PLANTATIONS IN MYLAPORE R.F.

Name and year of plantation.	Espacement.	Age in years.	Number of regeneration spots.	Girth Classes. 15 cm. and below G.B.H.		Above 15 cm. to 30 cm. G.B.H.		Above 30 cm. to 45 cm. G.B.H.		Above 45 cm. to 60 cm. G.B.H.	
				Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Mylapore 1958	3.35 m^2	17	1760	50	2.84	15	8.52	530	30.11	670	38.07
Mylapore 1959	3.35 m^2	16	1730	50	2.89	250	14.45	680	39.31	290	16.76
Mylapore 1960	3.35 m^2	15	2130	190	8.92	450	21.12	330	15.49	250	11.74
Mylapore 1961	3.35 m^2	14	1740	180	10.34	370	21.26	650	37.36	90	5.17

Name and year of plantation.	Esplacement.	Age in year.	Number of regeneration spots.	Girth Classes. Above 60 cm. to 75 cm. G.B.H.		Above 75 cm. to 90 cm. G.B.H.		Miscellaneous species.		Failures.	
				Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.
				(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Mylapore 1958	3.35 m^2	17	1760	110	6.25	10	0.57	80	4.55	160	9.09
Mylapore 1959	3.35 m^2	16	1730	30	1.73	..	..	60	3.47	370	21.39
Mylapore 1960	3.35 m^2	15	2130	30	1.41	..	..	30	1.41	8[illegible]0	9.[illegible]
Mylapore 1961	3.35 m^2	14	1740	10	0.58	..	..	..	..	440	25.29

279. *Soil analysis*—Two samples of soil, one from an area of good growth and the other from an area of poor growth in the plantations in Mailapore R.F., were gathered and got analysed at the Soil Testing Laboratory at Kajamalai, Tiruchirapalli. The results are furnished below:—

Area. (1)	Texture. (2)	pH. (3)	E.C. (4)	N. (5)	P. (6)	K. (7)
Good growth	S.L.	6.8 NL.	0.04 HS.	57.24 L	3.96 L	207 H
Poor growth	S.L.	8.1 NL.	0.04 HS.	25.44 L	6.60 M	63 M

Details of abbreviations :

S[illegible] :

PART II.

FUTURE MANAGEMENT DISCUSSED AND PRESCRIBED.

CHAPTER—I BASIS OF PROPOSALS.

SECTION—GENERAL OBJECTS OF MANAGEMENT.

280. The working plan will deal with the whole of the Chingleput Forest Division as constitutd at present. The objects of management naturally vary with each working circle but the general principles involved may broadly be stated as follows :—

(i) To maintain the forests in a state of increasing productivity for obtaining the maximum financial return per hectare.

(ii) To attempt to meet, at least partially, the agricultutal, pastoral and domestic needs of the local population and the states need for industrial raw material.

(iii) To take all measures to ensure the conservation and improvement of natures resources of soil, water and wild life.

(iv) To exploit with due regard to silvicultural and horticultural principles the resources of the forests.

(v) To augment the forest resources by raising farm or village forests.

(vi) To preserve as nature reserves certain portions of the natural forest for recreational and educational purposes.

SECTION 2—METHODS OF TREATMENT TO BE ADOPTED.

281. The methods of treatment to be adopted vary with each working circle and are described in detail in the following chapters. Prescriptions and suggestions on matters not covered by the different working circles are indicated in the chapter on Miscellaneous Regulations.

SECTION 3—WORKING CIRCLES, THEIR AREA AND DISTRIBUTION.

282. To realise the objects of management set forth above the following six working circles have been constituted.

Serial number and name of the working circle.	*Area in square. kilometres.*
(1)	(2)
1. Cashew Plantation	94·13
2. Eucalypt Plantation	54·47
3. Red Sanders Plantation	13·91
4. Afforestation	18·00
5. Minor Forest Produce	All the forests of the division.
6. Grazing	All the forests of the division except those closed to grazing.

283. The Fuel Working Circle and Soil Conservation Working Circle of the previous Working Plan have been discontinued for the reasons mentioned in paragraphs 237 and 245 respectively.

SECTION 4—PERIOD OF THE WORKING PLAN.

284. This Working Plan will beforce for a period in ten years from 1st of April 1976 to 31st March 1986.

CHAPTER II—WORKING PLAN FOR THE CASHEW PLANTATION WORKING CIRCLE.

SECTION 1—GENERAL CONSTITUTION AND CHARACTER OF THE VEGETATION.

285. *General.*—Cashew (Annacardium Occidentale LINN.) is not an indegonous species out came from Brazil in South America about four centuries ago having been introduced by the Portugese mainly with the object of checking soil erosion along the Malabar coast. It is indigenous to the Caribbean region and naturalised elsewhere in the tropics. It is now cultivated extensively all along the East and West Coastes of South India up to Orissa and Bombay. It is a medium sized evergreen tree with a low and disproportionately large spreading crown. Its normal height is about 8 meteres and crown spread up to 9 to 10 metres. Its fruit is poculiar consisting of the swollen receptacle known as the Cashew ap·ple and the true fruit which is reniform is attached to the underside of the apple. India holds a virtual monopoly of the trade in Cashew kernel and shell oil, handling about 90 per cent of the world trade in them. It is a hardy and drought resistant overgreen species and strong light demander and comes up well on a variety of soilc except clayey and alkaline soils. There is no part of the Cashew tree that is not of economi, interest to man. While the Cashewnut is the main product of the species, Cashewnut shell liquid Cashew apples and Cashew testa are its important by-products. A detailed note on the utilisation of Cashew is furinished in appendics XII.

286. As against the annual domestic requirements of 4 lakh tonnes of raw cashewnuts in the country a quantity of 1·85 lakh tonnes valued at Rs. 45·53 crores, based on the unit value of imported nuts, was procdued in 1974–75. During 1975, 1·27 lakh tonnes of raw nuts were imported at a cost of Rs. 30.98 crores from Kenya, Tanzania, Madagascar and other East African countries. During 1975, 58,449 tonnes of cashew kernels were exported to numerous countriles all over the world earning a foreign exchange of Rs. 104·74 crores. During the same period 5342 metric tonnes of Cashewnut shell liquid was exported to Japan, the Natherlands, Rumania, Singapore, U.S.A. the United Kingdom and Czechoslavakia bringing in a foreign exchange of Rs. 127·6 lakhs. The above figures give some idea of the actute shortage of raw nut production in the country and the potential of the species as a foreign exchange earner.

287. *Objects of management.*—The object of management is to optimise the productivity of the existing plantations with a view to meeting the demand of the Cashew processing units in the State through a package of horticultural practices.

288. *General constitution and character of the vegetation.*—This working circle will consist of all the Cashew plantations except those that are complete failures and unsuited to restocking with the species because of adverse edaphic factors, and those raised outside forest limits under the Five-Year Plan Scheme of Farm Forestry.

289. A list of failed Cashew plantations unsuited to restocking with Cashew because of adverse edaphic factors and not included in this working circle is furnished below :

LIST OF FAILED CASHEW PLANTATIONS NOT INCLUDED IN THE CASHEW PLANTATION WORKING CIRCLE.

Name of series.	*Name and year of plantation.*	*Extent in hectares.*	*Remarks.*
(1)	(2)	(3)	(4)
Chingleput	Edamachi, 1959	98·74	..
	Appur, Bit I ,1960	59·49	Included in the Eucalypt Working Circle.
	Thirumani, 1971	16·00	Do.
Kelambakkam	Kayar, 1959	131·12	Do.
	Vallam, Bits I and II 1971 ..	20·43	Do.
	Anjur, 1971	24·00	Do.
	Vallam Bits, I and II 1972 ..	19·40	..
	Mambakkam, 1958	49·78	..
	Anjur, 1972	16·00	Include in the Eucalypt Working Circle.

Name of Ranges.	*Name and year of plantation.*	*Extent in hectares.*	*Remarks.*
(1)	(2	(3)	(4)
Madurantakam	Nemmeli 1972	28·00	Included in the Eucalpt Working Circle
Tambaram	Vattambakkam 1945	0·40	Do.
	Nanmangalam 1972	44·80	Do.
	Pudupair 1972	50·00	Do.

290. ***Area.***—The area of this working circle is 94·13 square kilometres.

SECTION 2—DIVISION OF THE AREA.

291. ***Division into plantation series.***—The plantation in eachRange will constitute a series as Cashew is a horticultural crop and grouping of the plantation Rangewsie will be administratively more convenient at the Range level and below. As there are five Ranges there will be five plantation series named after the Ranges. A statement showing the distribution of the series and their area is furnished below :

STATEMENT SHOWING DISTRIBUTION OF THE SERIES.

Serial number.	*Name of series.*	*Area in sq. kilometres.*
(1)	(2)	(3)
1	Tiruvallur	14·96
2	Tambaram	24·38
3	Kelambakkam	22·77
4	Chingleput	13·19
5	Madurantakam	18·83
	Total	94·13

292. *Constitution of plantation series.*—A list of plantations constituting each series and their areas are furnished in the subjoined statement.

TABULAR STATEMENT OF DIVISION OF THE AREA INTO PLANTATION SERIES.

Tiruvallur series.		*Tambaram series.*		*Kelambakkam series.*		*Chingleput series.*		*Madurantakam series.*	
Name and year of plantation.	*Area in hectares.*	*Name and year of plantation.*	*Area in hectares.*	*Name and year of plantation.*	*Area in hectares.*	*Name and year of plantation.*	*Area in hectares.*	*Name and year of plantation.*	*Area in hectares.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Allikuli 1945	1·21	Vandalur 1947	0·40	Mambakkam 1956	218·53	Tiru kalikundram 1957	161·47	Maiyur 1956	36·02
Pularambakkam 1953	4·85	Mannur 1954	7·56	Thaiyur 1956	230·67	Kattankolathur 1957	13·76	Kattur 1956	219·74
Mailapore 1956	209.22	Vandalur 1956	234·31	Tirutheri 1956	178·87	Siruvanur 1957	203·96	Illalur 1956	212·46
Irugulam 1956	202·34	Vadakkupattu 1956	207·19	Mambakkam 1957	174·26	Kattankolathur 1958	192·91	Kattur 1957	205·99
Palavakkam 1957	212·37	Gudalur (Part) 1956	185·09	Thaiyur 1957	60·70	Tirukalikundram 1958	207·88	Illalaur 1957	84·98
Manali 1958	140·43	Vandalur 1957	209·63	Tirutheri 1957	79·32	Salur 1959	195·46	Madayathur 1957	126·67
Manali 1959	217·72	Gudalur 1957	206·44	Sengundram 1957	72·84	Appur Bit II 1960	29·92	Maiyur 1958	10·12
Manali 1960	69·20	Vandalur 1958	189·39	Sonalur 1958	172·80	Kavanipakkam 1960	69·20	Kattur 1958	194·65
Eurmaivettipalayam 1960	142·85	Gudalur 1958	203·15	Sengundram 1958	219·52	Kattankolathur 1961	3·06	Madayathur 1958	205·18
Irugulam 1960	112.50	Unamanjeri 1959	129.09	Sonalur 1959	214·08	Salur 1971	16·00	**Kattur 1959**	195·87
Kondamanallur 1970	20.00	Nallur 1959	52.61	Anjur 1959	184·94	Periungoli 1971	35·00	**Maiyur 1959**	10·12
Pulikundram 1972	20.00	Vandalur 1959	84.98	Sirukundram 1959	57·46	Marudam 1971	21·20	Madayathur 1959	41·67
Pulikundram 1973	43.30	Maganiam 1959	211.65	Kayar 1960	38·85	Perungoli 1972	47·00	Valluvapakkam 1959	103·60
Senjiagaram 1973	10·00	Kumuli 1960	178.47	Sirukundrams Bits I and II 1960.	134·76	Paranur 1972	6·90	**Alathur 1959**	81·66
Vangal 1974	4·00	Nallur 1960	197·08	Sonalur 1960	150·14	Marudam 1972	41·40	Oragadam 1960	36·00
Pujiundram 1974	25·50	Maganiam 1960	39·66	Kolarhur 1971	40·00	Tirukalikundram 1972	12·10	Alathur 1960	25·45
Malandur 1974	3·60	Vandalur 1964	33·99	Kolathur 1972	49·00	Salur 1972	2·40	Alathur 1960	24·55
Senjiagaram 1974	4·00	Maganiam 1972	37·20			Perungoli 1974	47·40	**Thandalam 1969**	**20.00**
Senjiargaram 1974	4·00	Maganiam 1972	37·20			Perungoli 1974	47·40	Illalur 1969	**5.00**
Senjiagaram 1975	7·00	Nanmangalam 1973				Thiruman 1974	14·20	Nemmeli 1971	**28.00**
Vembedu 1975	20·00							Koliyalam 1975	**40·00**
Pulikundram 1975	**25·00**								

293. Since the surveyed skectch of the 1964 Vandalur (33·99 ha.) plantation, which lies outside Vandalur R.F. but contiguous to it, is not available it could not be marked on the detailed management map. The District Forests Officer will get it surveyed in consultation with the Revenue authorities and mark it on the above map.

SECTION 3—ANALYSES AND VALUATION OF THE CROP.

294. The yields per hectare in relation to age for the plantations of the dividsion have been worked out and furnished in paragraph 271. They are, therefore, not repeated here. Suffice it to say that the average annualy yield has been woofully low being 33·25 kg. per hectare (Based figures from 1971 to 1975) as against the stage average of about 125·90 kg. (For both Government and private plantations.)

295. The average price fetched per kilogram in the auction sale of departmentally collected rawnuts in the past was as follows —

	RS.
1971–72	1·83
1972–73	1·91
1973–74	3·19
1974–75	4·26
1975–76	3·00

SECTION 4—METHOD OB TREATMENT

296. As cashew a horticultural crop the yield is very much a function of the intensity of cultural and prophylactic operations carried out and the quantum of rainfall received. Normal and well distributed rainfall is harbinger of good yields. Consistent with these facts and the objects of management the method of treatment will consist of the following horticultural practices —

(i) Tending and beating up of the plantations raised in 1975.

(ii) Eradication of rank growth with a view to eliminating its competition with the Cashew for the available nutrition and acting as a physical handicrapts the development of the crowns of the latter.

(iii) Ploughing the soil periodically in younger plantations to aid their development increased aeration and mosture availability.

(iv) Thinning with a view to facilitating overall development of the plantations.

(v) Adoption of pest control measures whenever instensive pest attacks occur.

(iv) Harvesting of the usufructs departmentally.

(vii) Restocking of blanks of 5 hectares and above mainly with Eucalyptus tereticornis with a view to ensuring opytimum land use.

297. *Rotation*.—No presice information is available as to the best rotation to be adopted under forest conditions. Cashew commences to yield from about the fourth year and the life expentancy of the trees is said to be 50 years although in low rainfall areas they are understood to die in about 40 years. The tree is productive through its life but there is possibility of the yield dwindling after the 28th year as pointed out in paragrph 271. A clearer indication of the rotation to be adopted is expected to emerge at the end of this plan when the plantations will have passed through another decade. The fixing of the rotation will, therefore, be left an open question for the present and no plantation will be clearfelled during the period of this plan.

298. Regulation of yield Since Cashew trees are regular annual yielders the usufructs will be regularly harvested annually through departmental agency.

299. Although sporadic flowering of individual plants takes place in the first year itself, it is only from the 4th year onwards that the trees start yielding a sizable quantity of nuts. The yield of nuts then progressively increases till the trees reach the 10th year from which time onwards the full yield may ordinarily be realised.

300. Cashew trees produce flowers on the twigs and branches of the current season only. The factors which promote better growth of the crown are directly responsible for better yields. Out of the two growth flushes in the season it is the earlier phase from October to January that gives rise to panicles while the latter flushes of March to May are invariably unproductive. The hermaphrodite flowers occur only during the middle of the flowering season while staminate flowers occur at the begining and the end of the season. This accounts for the drying up of the inflorescence during certain periods of flowering due to the shedding of the staminate flowers and this should not be mistaken for disease. During the peak production of hermaphoridite flowers i.e., January to February, there is ordinarily neither wind nor rain but should a shower or two occur at this time, bumper yields are obtained. On the other hand if there is heavy dew fall during this period the inflorescene gets scorched resulting in poor yields. Similarly, cloudy weather results in the shrivelling and drying up of the inflorescence.

301. The duration of ripening from the date of pollination varies from 45 to 70 days. When the apple is fully ripe the nut is mature for harvesting. Picking of nuts is done daily as all nuts do not ripen at the same time. March-April is the peak picking season.

302. As the yield of the tree depends on the production of hermaphrodite flowers and as the incidence of the production of the hermaphordite flowers in the panicles is an inherent feature of the species and cannot be manipulated by cultural operations, the selection of high yielding mother trees for collection of planting material is of prime importance. The distance between the anther and stigma is also an important factor in obtaining better yields. Shorter style lengths and lower ratios of style length to stamen length are responsible for high yileds. This is also an important factor to be considered in the selection of mother trees.

303. Rainfall greatly influences the yield viz., (i) in years of low rainfall the yield tends to be subnormal ; (ii) lack of adequate rainfall resluts in the reduction of nut size ; (iii) rainfall in March during the course of development of the fruit induces large nut size ; (iv) prolonged periods of cloudy or rainy weather during the flowering season adversely affects the yield and (v) heavy rain in October—Novermber before flowering enhances the yield considerably. Based on these factors bumper yields occur once in about three years.

SECTION 5—HORTICULTURAL OPERATIONS.

304. Tending of plantations raised in 1975—A weeding and soil working will be done in the 1975 plantations in the year 1976. It will be done to a radius of 0.60 m. around the plants and to a depth of 15 cm. Weeding will entail uprooting of all rank growth and not its mere cutting back or scraping. Soil-working will be done with pickaxes. The work will be done at the onset of the south-west monsoon which coincides with the commencement of the growing season. At the same time casualties will be beaten up in these plantations with Cashew duly ignoring regeneration patches with saline alkali soil which are patently unsuited to the species. In 1977 a weeding and soil-working will be done on similar lines around the 1976 refills.

305. Eradication of rank growth and ploughing—This work, locally known as Intensive Cultural Operations will, in view of its high cost, be done on a five year cycle as per the programmes furnished in the accompanying tabular statements instead of on a three year cycle as heretofore. One aspect of these cultural practices that is disquieting is the reemergence of rank growth in older plantations and interior areas despite constant attention. The likely reason for this is that uprootal is not properly done and once the area is ploughed immediately thereafter the defect gets covered up and cannot be detected then and there. Other problems faced are continued low and fluctuating yields despite the cultural treatment. Taking the above factors including that of cost into consideration it is decided to carry out the work only in those plantations that are in need of them and to categories the treatment as follows :—

Type I—Clearing and uprootal of rank growth and ploughing.

Type II—Clearing and uprootal of rank growth.

The difference between the two types is that the treatment in the latter will not consist of ploughing. To this category will be allotted those plantations that are over 15 years in age. This will keep down costs without, it is believed, any serious impairment of yield and at the same time ensure that uprootal is carried out effectively.

306. Inter cropping with legumes—In order to enrich the soil through fixation of atmospheric nitrogen as well as suppress rank growth inter-cropping with pulses will be taken up along with cultural operations in type I treatment plantations. If kumridars are not forthcoming the work will be done departmentally. If done departmentally the work may be taken up on a pilot scale and expanded gradually depending on the results. As protection of the crop is very important in a venture of this type it is suggested that the right to protect and harvest the crop may be sold in public auction. When the crop reaches a stage when crop prospects can be assessed. The technical expertise of the Agriculture Department both in raising and marketing the crop may be availed of. If the work proves successful and the cost of ploughing can also be made up then the District Forest Officer may extend it to type II treatment plantations.

307. The programmes for both the types of treatment are furnished in the subjoined statements The rationale underlying their scheduling is governed by the following considerations :—

(i) Observance of a five-year interval before the nx treatment in the case of plantations once treated.

(ii) Priority to such of those plantations that are overdue for the first treatment.

(iii) A more or less equitable distribution of the annual work-load amongst the ranges and over the period of the working plan.

TABULAR STATEMENT OF INTENSIVE CULTURAL OPERATIONS
TYPE I—TREATMENT.

Year of operation. (1)	*Name of series.* (2)	*Name and year of plantation.* (3)	*Area in hectares.* (4)	*Remarks.* (5)
1976-77	Kelambakkam	Kolathur, 1971	40·00	
	Chingleput	Salur, 1971	16·00	
		Perungoli, 1971	35·00	
		Marudam, 1971	21·20	
	Madurantakam	Nemmeli, 1971	28·00	
1977-78	Tiruvallur	Pulikundram, 1972	20·00	
	Tambaram	Maganiam, 1972	37·20	
	Kelambakkam	Kolathur, 1972	49·00	
	Chingleput	Appur Bit II, 1960	27·92	
		Tirukalikundram, 1972	12·10	
		Salur, 1972	2·40	
		Perungoli, 1972	47·00	
		Paranur, 1972	6·90	
1978-79	Tiruvallur	Senjiagaram, 1973	3·60	
		Pulikundram, 1973	43·30	
	Tiruvallur	Senjiagaram 1974	4·00	
	Chingleput	Kattankolathur, 1961	3·06	
		Marudam, 1972	41.40	
1979-80	Tiruvallur	Vengal, 1974	4·00	
		Pulikundram, 1974	25·50	
		Malandur, 1974	3·60	
		Senjiagaram, 1975	7·00	
	Tambaram	Vandalur, 1964	33·99	
	Chingleput	Thirumani, 1974	14·20	
		Perungoli, 1974	47·70	
	Madurantakam	Kolialam, 1975	40·00	
1980-81	Tiruvallur	Vembedu, 1975	20·00	
		Pulikundram, 1975	25·00	
		Kondamanallur, 1970 (Restocked 1976)	20·00	
	Madurantakam	Thandalam, 1969	20·00	
1981-82	Kelambakkam	Kolathur, 1971	40·00	
	Chingleput	Salur, 1971	16·00	
		Perungoli, 1971	35·00	
		Marudam, 1971	21·20	
	Madurantakam	Nemmeli, 1971	28·00	
1982-83	Tiruvallur	Pulikundram, 1972	20·00	
	Tambaram	Maganiam, 1972	37·20	
	Kelambakkam	Kolathur, 1972	49·00	

TABULAR STATEMENT OF INTENSIVE CULTURAL OPERATIONS TYPE I—*cont.*

TREATMENT.

Year of operation. (1)	*Name of series.* (2)	*Name and year of plantation.* (3)	*Area in hectares.* (4)	*Remarks.* (5)
1912-83—*cont.*	Chingleput	Tirukalikundram, 1972	12·10	
		Salur, 1972	2·40	
		Perungoli, 1972	47·00	
		Paranur, 1972	6·90	
1983-84	Tiruvallur	Senjiagaram, 1973	10·00	
		Pulikundram, 1973	43·30	
		Senjiagaram, 1974	4·00	
	Chingleput	Marudam, 1972	21·20	
1984-85	Tiruvallur	Pulikundram, 1974	25·50	
		Vengal, 1974	4·00	
		Malandur, 1974	3·60	
		Senjiagaram, 1975	7·00	
	Chingleput	Thirumani, 1974	14·20	
		Perungoli, 1974	47·00	
	Madurantakam	Koliyalam, 1975	40·00	
1985-86	Tiruvallur	Pulikundram, 1975	25·00	
		Vembedu, 1975	20·00	
		Kondamanallur, 1970 (Restocked 1976).	20·00	

TABULAR STATEMENT OF INTENSIVE CULTURAL OPERATIONS TYPE II—TREATMENT.

Year of operation. (1)	*Name of series.* (2)	*Name and year of plantation.* (3)	*Area in hectares.* (4)	*Remarks.* (5)
1976-77	Tiruvallur	Erumaivettipalayam, 1960	142·85	
	Kelambakkam	Sirukundram Bits I and II 1960.	134·76	
	Madurantakam	Madayathur, 1958	205·18	
		Kattur, 1959	23·88	**Area not tackled in 1970-71.**
1977-78	Tiruvallur	Manali, 1960	69·20	
	Tambaram	Vandalur, 1947	0·40	
		Mannur, 1954	7·56	
		Vandalur, 1959	84·98	
1978-79	Tambaram	Maganiam, 1960	65·96	
	Kelambakkam	Sonalur, 1960	150·14	
	Madurantakam	Madayathur, 1959	41·67	
1979-80	Tambaram	Kumli, 1960	178·47	
	Kelambakkam	Sengundram, 1957	72·84	
		Kayar, 1960	38·85	
1980-81	Tiruvallur	Mailapore, 1956	209·22	
	Tambaram	Gudalur, 1957	210-44	
		Maganiam, 1959	211-65	
	Kelambakkam	Thaiyur, 1957	60·70	

TABULAR STATEMENT OF INTENSIVE CULTURAL OPERATIONS

TYPE-II TREATMENT—*cont.*

Year of operation. (1)	*Name of series.* (2)	*Name and year of plantation.* (3)	*Area in hectares.* (4)	***Remarks.*** (5)
1981-82	Tiruvallur	Irugulam.1960	112·50	
	Tambaram	Vandalur,1956	234·31	
		Vadakkupattu,1956 ..	207·19	
		Vandalur,1957	209·63	
1982–83	Tambaram	Unamanjeri,1959	129·09	
	Kelambakkam	Thaiyur,1956 . ..	230·67	
	Madurantakam	Alathur,1960	25·45	
1983–84	Tiruvallur	Irugulam,1956	202·34	
		Palavakkam,1957 .	212·87	
1983–84	Kelambakkam	Sirukundram,1959 ..	57·46	
1984–85	Tiruvallur	Manali,1958	140·43	
		Manali,1959	217·72	
	Madurantakam	Thandalam, 1969	20·00	
1985–86	Tambaram	Gudalur 1958	Area to be assessed.	**Balance area at the southern end is to be tackled. The area is to be assessed before taking up the work.**
	Kelambakkam	Sonalur, 1959	**214·08**	

308. ***Thinning.***—The Cashew tree needs plenty of sunshine and has an inherent tendency to spread widely and fruit only on new wood which appears mostly on the outer perimeter of the crown. At the same time Cashew being a horticultural crop it is only but natural that during thinning, as a general principle, only pooryielders are removed. The object of thinning may, therefore, be summed up as the retention of the maximum number of good yielders consistant with the elimination of congestion.

309. *Thinning cycle.*—In normally grown plantations raised at an espacement of 5 metres x5 metres it is found that the crowns start touching in the 8th. year. The first thinning will therefore, be carried out in the 8th. year. The second, which will also be the last thinning, will be carried out in the 15th year which is more or less mid-rotation age.

310. The plantations that will come up for thinning fall into two categories, the first being those that will come up in the normal course and the second being those in which the operation has fallen into arrears. As far as the second category of plantations is concerned not even the first thinning has been carried out in most of them and hence they have been included, irrespective of age, in the programme for the first thinning. Further, in the case of the older plantations where congestion and stagnation have been heavy and prolonged and age is against them one is not sure whether the response to thinning will be considerable. Even so a second thinning in them has been provided for allowing the prescribed interval of seven years between the two thinnings It is, however, laid down that the second thinning is not to be done as a matter of routine but only after a careful study of the response to the first thinning and yield trend in the particular plantation. In other words horticutural as well as economic considerations will decide whether the second thinning should be carried out in a particular plantation or not. The District Forest Officer will decide the issue of thinning in each such plantation on merits in consultation with the Conservator of Forests.

311. In the case of plantations where intensive cutural operations have been prescribed to be carried out the thinning has been so scheduled as to be carried out in the succeeding year so that marking and felling is rendered easy and the beneficial effect of the intensive cultural operations goes only to the trees to be retained.

312. *Marking and felling rules in thinning.*—(i) Marking will be done during March-April.

(ii) Marking will be selective, good yielders being retained in preference to poor ones. As a useful guide to the marking officer the suberdinates with the help of taskemen can mark with a band of tar all good yielders over a period of three years prior to the year of thinning. While selective marking with a view to retaining good yielders is the ideal this may not always be possible in pratice. In uniformly developed plantations thinning will obviously be more mechanica than selective and sacrifice of some good yielders inevitable.

(iii) Thinning need not be done where the crowns have not started to meet and may be deferred until such times as such a condition sets in.

(iv) Even spacing of the retained stems is to be aimed at.

(v) Marking will consist in the marking officer affixing his hammer mark and a serial numb in coal tar or paint to a blaze to be made at the base of the tree to be felled.

(vi) Marking will be done by an officer not below the rank of an Assistant Conservator of Forests although nothing will prevent the subordinate staff from doing a preliminary marking as suggested in sub-paragraph (ii) above.

(vii) Felling of the marked trees will be done after haruest of the usufructs. The stumps may be uprooted in view of the general scarcity of fuel in the tract.

(viii) The felled material will be disposed of in public auction as fuel and removed by the purchaser under the cover of Form I permits and strict departmental supervision.

313, Thinning programme—The thinning programmes for the first and second thinnings are tabulated as follows :

PROGRAMME FOR FIRST THINNING IN CASHEW PLANTATIONS.

Year of thinning	*Name of series.*	*Name and year of plantation.*		*Area in hectares.*	*Remarks.*
(1)	(2)	(3)		(4)	(5)
1977	Madurantakam	Thandalam	1969	20 00	..
		Illalur	1969	5·00	..
	Tambaram	Vandalur	1947	0 40	
	Tiruvallur	Erumaivettipalayam	1960	142·85	..
		Manali	1960	69·20	
	Kelambakkam	Sirukundram	1960	134·76	
	Kelambakkam	Mambakkam	1956	218·53	
		Tirutheri	1956	178·87	
		Thaiyur	1956	230·67	
	Madurantakam	Ilalur	1956	212·46	
		Kattur	1956	219·74	
	Tambaram	Vandalur	1956	234·31	
		Gudalur	1956	185·09	
1978	Tiruvallur	Maganiam	1960	39·66	
	Kelambakkam	Senalur	1960	150·14	
1978	Madurantakam	Madayathur	1959	41·67	
	Tiruvallur	Palavakkam	1957	212·87	
	Tambaram	Vandalur	1957	209·63	
		Gudalur	1957	206·44	

Year of thinning.	*Name of series.*	*Name and year of plantation.*	*Area in hectares.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
1978	Kelambakkam	Sengundram	1957	72·84
		Tirutheri	1957	79·32
		Thaiyur	1957	60·70
		Mambakkam	1957	174·26
	Madurantakam	Illalur	1957	84·98
		Madayathur	1957	126·67
1979	Kelambakkam	Kolathur	1971	40·00
	Chingleput	Salur	1971	16·00
		Perungoli	1971	35·00
	Madurantakam	Maridam	1971	21·20
		Nemmeli	1971	28·00
	Tiruvallur	Manali	1958	140·43
	Tambaram	Kumilli	1960	178·47
	Kelambakkam	Kayar	1960	38·85
	Tambaram	Vandalur	1958	189·39
		Gudalur	1958	203·15
	Kelambakkam	Sonalur	1958	172·80
	Chingleput	Kattankolathur	1958	192·91
	Madurantakam	Madayathut	1958	205·18
1980	Tiruvallur	Pulikundram	1972	20·00
	Tambaram	MagaLiam	1972	37·20
	Kelambakkam	kolathur	1972	49·00
	Chingleput	Paranur	1972	6·90
		Marudam	1972	41·40
1980	Chingleput	Tirukalikundram	1972	12·10
		Salur	1972	2·40
	Tiruvallur	Manali	1959	217·72
	Tambaram	Nallur	1959	52·61
		Unamanjeri	1959	129·09
	Kelambakkam	Sonalur	1959	214·08
		Sirukundram	1959	57·46
	Chingleput	Salur	1959	195 46
	Madurantakam	Kattur	1959	195·87
1981	Tiruvllaur	Senjiragaram	1973	10·00
		Pulikundram	1973	43·30
		Irugulam	1960	112·50
	Tambaram	Nanamangalam	1973	30·00
		Nallur	1960	197·08
	Chingleput	Kattankolathur	1961	3·06
	Madurnatakam	Alathur	1960	25·45
		Oragadam	1960	36·00
1982	Tiruvallur	Vengal	1974	4·00
		Pulikundram	1974	25·50
		Malandur	1974	3'60
	Chingleput	Perungoli	1974	47·40
		Thiurmani	1974	14·20
1983	Siruvallur	Vembedu	1975	20·00
		Senjiagaram	1975	7·00
		Koliyalam	1975	40·00
1984	Tiruvallur	Kondamanallur (Re-stocked 1976).	1970	20·00

PROGRAMME FOR SECOND THINNING IN CASHEW PLANTATIONS.

Year of thinning. (1)	Name of series. (2)	Name and year of plantation. (3)		Area in hectare. (4)
1979	Tiruvallur	Mailapore	1956	209·22
		Irugulam	1956	202·34
	Kelambakkam	Sengunram	1958	219·52
		Anjur	1959	184·94
	Chingleput	Tirukalikundram	1957	161·47
		Tirukalikundram	1957	207·88
		Kattankulathur	1958	13·76
		Siruvanjur	1957	203·96
	Madurantakam	Maiyur	1956	36·02
		Maiyur	1958	10·12
		Maiyur	1959	10·12
		Kattur	1957	205·99
		Kattur	1958	194·65
1984	Madurantakam	Thandalam	1969	20·00
		Illalur	1969	5·00
	Tambaram	Vandalur	1947	0·40
	Tiruvallur	Erumaivettipalayam	1960	142·85
		Manali	1960	69·20
	Kelamakkam	Mambakkam	1956	218·53
		Tirutheri	1956	178·87
		Thaiyur	1956	230·67
	Maduratakam	Illalur	1956	214·26
		Kattur	1956	219·74
	Tambaram	Vandalur	1956	234·31
		Gudalur	1956	185·09
1985	Tiruvallur	Mangaiam	1960	39·66
	Kelambakkam	Sonalur	1960	150·14
	Madurantakam	Madayathur	1959	41·67
	Tiruvallur	Palavakkam	1957	212·87
	Tambaram	Vandalur	1957	209·63
		Gudalur	1957	206·44
1985	Kelambakkam	Sengundram	1957	72·84
		Tirutheri	1957	79·32
		Thaiyur	1957	60·70
		Mambakkam	1957	174·26
	Madurantakam	Illalur	1957	84·98
		Madayathur	1957	126·67

314. *Adoption oj post control measures.*—The common posts found in the division are the Shoot tip and Inflorescence caterpillars, Apple and Nut borer, Leaf miner, Thrips, Leaf and Blossem webber, Tea mosquite and Stem borrer. A description of these posts and their contorl measures have been furnished in paragraph 71. Anthracenose, locally known as · Soorai ', and caused by the fungus Colletetrichum gloeosperiodes also accurs in the division. Its control consists in spraying 1 per cent Bordeaux mixture or cooper oxychloride at the time of new flush and blossom. Removal od dead parts aids in minimising the spread of thr disease. A derailed list of the major posts and diseases of Cashew and their control is furnished in appendix XIII. A pest control measures are extremly costly it is laid down that if intensive attack is noticed in any year, barring attacks by stem borers which are sporadic and kill the tree outright if remedial measures are not taken promptly, they will be under-taken on a special footing in the affected areas obtaining the prior approval of the Conservator of Forests. In the case of stem borer attack the pretective staff will take prompt remedial action under report to the Range Officer rather than wait till the attack is in an advanced stage and the affected tree has to be uprooted and burnt as is the practice at present.

315. ***Harvesting of usufructs.***—Harvesting of usufructs will be done departmentally as at **present. The procedure to be followed in this connection has been described in paragraph 146 to 148.**

316. *Restocking of blanks of 5 hectares and adove.*—All the plantations raised prior to 1973 were gone over and stock mapped for blanks of 5 hectares and over in extent. The number of such blanks is 67. Their total extent is 1,580·48 hectares and they lie scattered over 43 plantations. These blanks will be restocked, mainly with Eucalyptus tereticornis, on a phased programme so as to ensure optimum land use. In water-logged sites, however, Acacia arabica will be raised. while on Saline alkali sites Acacia leucophloea will be raised. The District Forest Officer may include other species with the concurreoce of the Conservator of Forests. The regeneration technique will consist of clearfelling and uprootal of rank growth, ploughing, plantinng, aontainer plants in saucer pits at the onset of the south-west monsoon, weeding and soil-workiery and replacement of casualtiea. For Eucalyptus tereticornis the regeneration and nurser ttechnique prescribed in the Eucalypt Plantation Working Circle will be followed. For the other two species the regeneration technique will be modified so that the espacement will be 3·59 metres X 3·50 metres, the size of the pits 40 centimetre cube and the contained plants 40 to 46 centimetres tall with woody stems and not less than a year old. The nursery technique for these two species is furnished in paragraph 438. 20 per cent more number of container plants will be raised for replacement of casualties'

Regarding the 1970 Kondamanallur plantation the District Forest Officer has decided to restock the area with Cashew in 1976 and has taken the work in hand. The espacement to be followed in this case will be 5 metres X 5 metres and the size of the pits 30 cm. cube. Restocking will be done by dibbling. Ploughing before planting and weeding and soil-working and beating up in the second year will be done as per specifications in the Forest Schedule of Rates.

317. The following Cashew plantations which are complete failures have not been proposed for restocking as the edaphic factors are not suited to artificial regeneration. The natural growth in them will be allowed to reestablish itself.

Name of series. (1)	*Name and year of plantation.* (2)	*Area in hectares.* (3)
Tambaram	Vatrambakkam, 1945	0·40
	Nanmangalam, 1972	44·80
	Pudupair, 1972	50·00
Kelambakkam	Vallam (Bits I and II), 1971	20·43
	Mambakkam, 1958	49·78
Chingleput	Edamachi, 1959	98·74

318. The Programme for this work has been so drawn up that in the case of plantations in which intensive cultural operations are to be done restocking of blanks will be done in the same year so as to avoid dilution of effect. For this purpose site preparation in the blanks should be given priority so that planting is not delayed. The tabular statement for this operation is furnished in the subdtvisional statement.

TABULAR STATTEMENT OF RESTOCKING OF BLANKS; OF 5 HECTARES; AND ABOVE IN CASHEW PHANTATION

Year of restocking. (1)	*Name of series.* (2)	*Name and year of plantation.* (3)	*Number of blanks in the plantation.* (4)	*Area of blanks in each plantation to be restocked.* (5)	*Species prescribed for restocking.* (6)
1976	Tiruvallur	Kondamanallur, 1970	1	20·00	Cashew.
1977	Tiruvallur	Erumaivettipalayam 1960	1	45·44	Excalyptus tereticornis
	Tambaram	Vandalur, 1959	1	10·52	Do.
1977	Kelambakkam	Sriukundram Bit I, 1960	3	19·98	Do
		Sirukundram Bit II, 1960	1	22·50	Do.
		Sonalur, 1959	2	53·46	Do.
		Sonalur, 1960	1	99·79	Do

Year of restocking	*Name of series.*	*Name and year of plantation.*	***Number** blanks in the plantation.*	***Area of blanks in each plantation to be restocked***	***Species prescribed for restocked.***
(1)	(2)	(3)	(4)	**(5)**	**(6)**
		Sonalur, 1973	1	**15·94**	**Eucalypt tereticonis.**
		Sonalur, 1973	1	**101·17**	Do
		Kolathur, 1972	1	**25·66**	Do.
	Chingleput	**Salur, 1959**	2	**27·12**	Do.
		Tirukalikundram, 1958	3	56·65	Do.
		Siruvanjur, 1957	4	91·32	Do.
	Madurantakam	Madayathur, 1958	2	43·63	Do.
	Madurantakam	**Kattur**, 1959	1	29·90	Do.
		Nemmeli, 1971	1	28·00	Do.
1978	Tiruvallur	Manali, 1960	1	22·00	Do.
	Tambaram	**Maganiam**, 1960	1	16·55	Do.
	Kelambakkam	Mambakkam, 1956	1	9·11	Do.
		Sonalur, 1958	1	10·89	Do.
	Madurantakam	Illalur, 1957	1	12·36	Do.
		Valluvapakkam, 1959	2	98·24	Do.
1979	Tiruvallur	Manali, 1959	1	12·42	Do.
	Tambaram	**Kumili**, 1960	2	38·21	Do.
	Kelambakkam	**Kayar**, 1960	1	19·42	Do.
		Tirutheri, 1956	1	7·32	Do.
		Anjur, 1959	2	26·30	Do.
	Chingleput	Tirukalikundram, 1957	1	7·77	Do.
	Madurantakam	Madayathur, 1959	1	14·19	Do.
		Kattur, 1957	2	21·93	Do.
1980	Tiruvallur	Mailapore, 1956	2	41·00	Do.
	Tambaram	Gudalur, 1958	1	5·00	Do.
	Kelambakkam	Thaiyur, 1957	1	31·28	Do.
1980	Kelambakkam	Sengundram, 1958	2	26·63	Do.
	Madurantakam	Kattur, 1958	1	13·76	Do.
1981	Tiruvallur	Irugulam, 1960	1	21·48	Do.
	Tambaram	Vandalur, 1956	1	5·38	Do.
		Vadakkupattu, 1956	2	48·94	**Do.**
1982	Tambaram	Unamanjeri, 1959	**4**	38·97	**Do.**
	Kelambakkam	Thaiyur, 1956	**2**	118·85	Do.
1983	Tiruvallur	Palavakkam, 1957	2	110·48	Do.
	Tambaram	Maganiam, 1959	1	63·37	Do.
	Kelambakkam	Sirukundram, 1959	1	6·84	Do
1984	**Truvallur**	inali, 1958	2	40·71	**Do.**

SECTION 6—OTHER REGULATIONS.

319. *Demarcation of restocked blanks.*—The blanks to be restocked have been marked on the detailed management maps. They will be surveyed and area computed, and permanently demarcated with a cleared line two metres wide and stone slabs, of specifications, mentioned in para 364 , planted at their four salient corners becuase they will have to be transferred to other working circles at the time of revision of this plan.

320. *Exploitation of the plantations.*—The Eucalypt plantations that are raised will be worked under the simple coppice system on an eight year rotation while the plantations of other species will not be exploited during the period of this plan.

321. *Closure to grazing.*—Newly raised plantations will be closed to grazing for a period of five years inclusive of the year of planting. Any extension of the closure period if found necessary, is left to the discretion of the District Forest Officer. In the case of clearfelled Eucalypt plantations the period of closure will be 3 years inclusive of the year of felling.

322. *Inspection paths.*—Two metres wide inspection paths will be maintained in the plantation including the restocked portions.

323. *Fire protection.*—The boundary lines of the plantations as well as the 2 metre wide lines around the restocked areas will be kept clear of all growth. Otherwise, no special fire protection measures are considered necessary.

SECTION 7—CONTROL.

324. The following control records will be maintained by the District Forest Officer and posted annually :

(i) Record of works.
(ii) Register of deviations.
(iii) Control book.
(iv) Control journal.
(v) Nursery and plantation journals.
(vi) Control map.

The manner in which these records are to be maintained is furnished in paragraphs— to .

325. A separate plantation journal will be maintained for each restocked blank while a brief reference to the work will be made in the jorunal of the concerned Cashew plantation.

CHAPTER III—WORKING PLAN FOR THE EUCALYPTus PLANTATION WORKING CIRCLE.

SECTION I—GENERAL CONSTITUTION OF THE WORKING CIRCLE AND CHARACTER OF THE VEGETATION.

326. *Objects of management*—The main objects of management of this Working Circle are to be replace the low productive plains scrub forest by pure plantations of fast grown and high yielding species with a view to meeting the escalating demand for fuel and industrial wood occasioned by a stedy increase in the population and its standard of living and to maintain the existing Eucalypt plantations in as high a state of productivity as is possible.

327. *Genera Constitution.*—The working circle will include the existing Eucalyptus plantations and fresh areas proposed for planting with Eucalypt tereticonis. It will not however include plantations handed over to the State Silviculturists Division and Public Works Department and those that lie within the limts of municipal towns which are dealt with in section 7 of the chapter on Miscellaneous Regulations.

328. *Area.*—The area of this working circle is 54·47 sq. km. of which 43·36 sq. km. consist of existing plantations of Eucalyptus tereticornis and E. camaldulensis and the balance of new areas prescribed for planting.

329. *Character of the vegetation.*—The two types of natural forests included in this working circle for conversion are referred to by Champion and Seth as the Southern thorn scrub and Tropical dry evergreen scrub and are desvribed in paragraphs 57 and 59 respectively. Both the types represent the degraded form of their original types. The soil is generally a red gravelly loam.

SECTION 2—DIVISION OF THE AREA.

330. *Division into planting series.*—No series were formed in the past due to haphazard selection of the planting sites with a veiw to achieving Five-Year Plan targets rather than establish series that could be worked on the principle of sustained yield. Inthe previous plan existing and future plantations were arranged Rangwise. The same arrangement will be followed in this plan and each Range will constitute a series. Consequently the area of this working circle is divided into five planting series which are named after the Ranges. A statement showing the distribution of the series and their areas is furnished below:—

STATEMENT SHOWING DISTRIBUTION OF THE SERIES.

Serial number.	*Name of series.*	*Area already planted up in hactares.*	*Area to be planted up in hectares.*	*Total area of the series in hectares.*
(1)	(2)	(3)	(4)	(5)
1	Tiruvallur	966·33	*Nil.*	966·33
2	Tambaram	720·36	127·90	848·26
3	Kelambakkam	652·57	437·11	1,089,68
4	Chingleput	675·05	75·49	750·54
5	Madurantakam	1,321·31	470·72	1,792·03
	Total ..	4,335·62	1,111·22	5,446·84

331. All the existing plantations and the annual areas to be planted up have been marked on the detailed management maps.

332. *Constitution of planting series.*—A list of plantations and future areas for planting constituting each series is furnished in the statement given hereunder.

TABULAR STATEMENT OF DIVISION OF THE AREA INTO FELLING SERIES

TIRUVALUR SERIES.

Name and year of plantation. (1)	*Area planted in hectares.* (2)	*Area to be planted in hectares.* (3)
Panchali 1961	8·09	..
Panchali Bits I and II, 1962	89·03	..
Peddapullur, 1962	8·09	..
Panchali, 1963	30·76	..
Peddapullur, 1963	82·96	..
Palavakkam, 1963	30·35	..
Erumaivettipalayam, 1964	4·05	..
Palavakkam, 1964	41·28	..
Peddapullur, 1964	63·13	..
Siruvada, 1965	29·54	..
Mailapore, 1965	20·64	..
Palavakkam, 1965	21,57	..
Allikuli, 1965	20·64	..
Nemalur, 1965	22·26	..
Nemalur, 1966	22·26	..
Mailapore, 1966	29·95	..
Palavakkam, 1966	21·45	..
Siruvada, 1966	20·64	..
Nemalur, 1967	26·72	..
Siruvada, 1967	16·19	..
Vengal, 1967	38·32	..
Mailapore, 1967	30·22	..
Palavakkam, 1967	21·04	..
Nemalur, 1968	25·98	..
Siruvada, 1968	16·35	..
Palavakkam, 1968	63·41	..
Vengal, 1968	56·12	..
Peddapullur, 1973	35·00	..
Peddapullur, 1974	30·90	..
Peddapullur, 1975	20·00	..
Karthikeyapuram, 1975	19·40	..

TABULAR STATEMENT OF DIVISION OF THE AREA INTO FELLING SERIES—*cont.*

Tambaram series.

Name and year of plantation. (4)	*Area planted in hectares.* (5)	*Area to be planted in hectares.* (6)
Gudalur, 1957	4·05	..
Mannur, 1957	4·05	..
Mannur, 1958	4·05	.
Vandalur, 1959	8·90	..
Gudalur, 1959	4·05	..
Mannur, 1959	8·09	.
Mannur, 1960	8·90	..
Gudalur, 1960	4·05	..
Mannur, 1961	8·09	..
Nanmangalam, 1961	7·59	..
Gudalur, 1961	4·05	..
Nanmangalam, Bits I and II, 1962	49·78	.
Gudalur, 1962	6·47	.
Mannur, 1962	8·09	..
Gudalur, 1963	4·05	..
Maganiam, 1963	23·47	..
Vattambakkam, 1963	29·54	..
Nanmangalam, 1964	8·90	
Maduraipakkam, 1964	21·04	
Nanmangalam, 1965	21·04	
Gudalur, 1965	2·02	..
Vadakkupattu, 1965	29·95	..
Vattambakkam, 1965	19·38	..
Vandalur, 1965	21·04	..
Vadakkupattu, 1966	19·02	..
Vattambakkam, 1966	35·97	..
Maduraipakkam, 1966	40·47	..
Vandalur Bits I and II, 1966	19·83	..
Vattambakkam, 1967	19·63	..
Vadakkupattu, 1967	14·32	..
Nanmangalam, 1967	13·42	..
Maduraipakkam, 1967	41·20	..
Gudalur, 1967	33·67	..
Maduraipakkam, 1968	10·93	..
Vattambakkam, 1968	12·84	..
Vadakkupattu, 1968	15·05	
Vattambakkam, 1969	9·16	..

Tambaram series—cont.

Name and year of plantation.	*Area planted in hectars.*	*Area to be planted in hectares.*
(4)	(5)	(6)
Maduraipakkam, 1969	6·80	..
Vattambakkam, 1970	19·36	..
Vattambakkam, 1971	13·00	
Vattambakkam, 1972	17·75	
Gudalur, 1972	4·00	
Vattambakkam, 1973	17·40	..
Vattambakkam, 1974	21·90	..
Vattambakkam, 1975	24·00	..
Mannur (1977 to 1980)	..	105·82
Vattambakkam, 1976	..	22·08

Kelambakkam series.

Name and year of plantation.	*Area planted in hectares.*	*Area to be planted in hectares.*
(7)	(8)	(9)
Mambakkam, 1960	4·05	..
Tirutheri, 1961	2·43	..
Tirutheri, 1962	8·09	..
Tirutheri, 1963	23·83	..
Thaiyur, 1963	60·70	..
Sirukundram, 1963	8·09	..
Tirutheri, 1964	10·93	..
Mambakkam, 1964	19·83	..
Vallam Bits I and II, 1964	23·27	..
Sengundram, 1965	19·83	..
Thaiyur, 1965	20·23	..
Mambakkam, 1965	20·23	..
Sengundram, 1966	23·07	..
Mambakkam, 1966	19·83	..
Kolathur, 1966	20·23	..
Sengundram, 1967	15·38	
Sirukundram, 1967	25·29	..
Kolathur, 1967	37·88	..
Anjur, 1968	26·33	
Kolathur, 1968	40·96	..

TABULAR STATEMENT OF DIVISION OF THE AREA INTO FELLING SERIES—*cont*

Kelambakkam series—contd.

Name and year of plantation. (7)	*Area planted in hectares.* (8)	*Area to be planted in hectares.* (9)
Kolathur, 1969	42·80	..
Anjur, 1969	21·60	..
Vallam, 1969	18·16	..
Kolathur, 1970	42·80	.
Anjur, 1970	21·60	..
Vallam, 1970	20·00	..
Sirukundram, 1972	35·30	..
Kayar (1977 to 1984)	..	341·19
Anjur (1977 and 1978)	..	40·00
Vallam (1977 and 1978)	..	31·92
Sengundram, 1979		24·00

Chingleput series.

Name and year of plantation. (10)	*Area planted in hectares.* (11)	*Area to be planted in hectares.* (12)
Paranur, 1958	6·07	..
Paranur, 1959	7·69	..
Tirukalikundram, 1960	8·09	..
Tirukalikundram, 1961	8·09	..
Tirukalikundram, 1962	8·50	..
Kattankolathur, 1963	18·62	..
Tirukalikundram, 1963	8·50	..
Tirukalikundram, 1964	20·23	..
Edamachi, 1964	37·63	..
Kattankolathur, 1964	9·02	.
Tirukalikundram, Bits I and II 1965	28·73	..
Kattankolathur, 1965	4·05	..
Kavanipakkam, 1965	22·66	..
Appur, Bits I and II, 1966	39·66	.
Salur, 1966	30·35	..
Appur Bits I and II, 1967	45·52	..
Salur, 1967	37·15	..
Appur, 1968	36·10	..
Kavanipakkam, 1968	36·26	..

TABULAR STATEMENT OF DIVISION OF THE AREA INTO FELLING SERIES—*cont*.

Chingleput series—cont.

Name and year of plantation. (10)	Area planted in hectars. (11)	Area to by planted in hectares. (12)
Kavanipakkam, 1969	29·00	..
Appur, 1969	30·00	..
Salur Bits, I and II 1970	20·00	..
Appur, 1970	30·00	..
Appur, 1971	25·86	..
Kattankolathur, 1972	12·10	..
Appur, 1972	37·76	..
Paranur, 1973	2·10	..
Appur, 1973	20·00	..
Appur, 1974	21·90	..
Appur, 1975	33·10	...
Appur, (1977 and 1978)	..	59·49
Thirumani, 1977	.	16·00

Madurantakam series.

Name and year of plantation. (13)	Area planted in hectares. (14)	Area to be planted in hectares. (15)
Alathur, 1958	2·02	..
Kattur, 1961	8·09	..
Kattur, 1962	7·69	..
Thottacheri, 1962	40·47	..
Thandalur, 1962	20·23	..
Kattugudalur, 1962	41·28	..
Thottacheri, 1963	81·34	..
Kattugudalur, Bits I and II, 1963	56·66	..
Kattur, 1963	19·83	..
Thottacheri, 1964	86·60	..
Acharapakkam, 1964	4·86	..
Kattugudalur, 1964	4·05	..
Kaitur, 1964	20·23	..
Alathur, 1964	21·85	
Thottacheri, 1965	39·25	
Chittarkadu, 1965	19·42	..

TABULAR STATEMENT OF DIVISION OF THE AREA INTO FELLING SERIES—*contd.*

Madurantakam Series—contd.

Name and year of plantation. (13)	*Area planted in hectares.* (14)	*Area to be planted in hectares.* (15)
Rajapalayam, 1965	21·45	..
Kattur, Bits I and II, 1965	10·12	..
Thandalam, 1965	29·95	..
Thottacheri, 1966	17·40	..
Rajapalayam, 1966	40·47	..
Kattur, Bits I and II, 1966	35·62	..
Thandalam, 1966	39·66	..
Kattugudalur, 1967	20·23	..
Gudalur 'A', 1967	51·31	..
Illalur, 1967	18·48	..
Kattur, 1967	24·36	..
Navalur, 1967	24·28	..
Rajapalayam, 1968	16·35	..
Thottacheri, 1968	58·62	..
Kattur, 1968	27·11	..
Alathur, Bits I and II, 1968	91·14	..
Oragadam, Bits I and II, 1968	28·41	..
Gudalur 'A', 1969	2·80	..
Illalur, 1969	22·60	..
Oragadam, 1969	25·62	..
Rajapalayam, 1972	25·55	..
Oaragadam, 1972	28·90	..
Navalur, Bits I and II, 1972	20·61	..
Alathur, 1972	4·50	..
Oragadam, 1973	34·30	..
Nemmeli, 1973	36·00	..
Nemmeli, 1974	30·60	..
Nemmeli, 1975	31·20	..
Gudalur 'B', 1975	30·00	..
Nemmeli, 1977	..	28·00
Gudalur 'B' (1977 to 1983)	..	99·64
Koliyalam, (1977 to 1984)	..	271·54
Maiyur, (1977)	..	22·54
Valur, (1977 and 1978)	..	[illegible]

333. The following failed Cashew Plantations which are not suitable for restocking with Cashew have been included in this working circle :—

Name of series. (1)	*Name and year of plantation.* (2)	*Area in hectares.* (3)
Kelambakkam	Kayar, 1959	131·12
	Vallam Bits I & II, 1971	20·43
	Anjur, 1971	24·00
	Anjur, 1972	16·00
Chingleput	Appur Bit I, 1960	59·49
	Thirumani, 1971	16·00
Madurantakam	Nemmeli, 1972	28·00

SECTION 3—ANALYSIS AND VALUATION OF THE CROP.

334. *Stockmapping.*—The areas included in this working circle for consersion have been occularly stockmapped and only such areas, including failed Cashew plantations at have been found suitable for planting with Eucalypt included. It has, however, to be mentioned that all the good areas have already been planted up and that what is left is only of marginal quality.

335. *Valuation of the crop.*—The areas prescribed for consersion do not contain any saleable growth. As regards the plantations raised it is observed that by normal standards they are patchy and the average yield per hectare on an average from plantations exploited hitherto has been 320 tonnes of debarked wood besides some bark and brushwood classified as lop and top, but as pointed out in paragrapah 232 there are, as of now, compelling reasons for perpetuating the raising of this species on a plantation scale.

SECTION 4—METHOD OF TREATMENT.

336. *Silvicultural system.*—The silvicultural system prescribed is the clearfelling system followed by concentrated artificial regeneration mainly with Eucalyptus tereticornis and in the case of the existing plantations the simple coppice system followed by restocking of sizable blanks in the year following the year of felling.

337. *Choice of species for planting.*—The species prescribed for planting is Eucalyptus teretit corins. Eucalyptus camaldulensis which has recently been ontriduced in the division, albei-successfully with seed obtained from the Arid Zone Rsearch Station, Jodphpur is not prescribed as the State Silviculturist has found that its yield of wood is slightly less than that of Euaclyptus tereticornis.

338. In patches unsuited to Eucalypt found in the regeneration areas Acacia leucophloes will be planted in saline alkali patches and Acacia arabica in water-logged patches so as to ensure optimum utilisation of the planting site.

339. *Rotation.*—The rotation is fixed at eight years which is the rotation followed over the rest of the state.

340. *Regulation of yield.*—Regulation of yield will be by area.

341. *Annual planting area.*—The total planting area is assessed at 1120·98 ha. scattered over 12 foret blocks. It is prescribed to plant up this extent over a period of nine years. The slightly long conversion period is due to formation of entire series in Koliyalam and Kayar R. F's.

SECTION 5—METHOD OF EXECUTING THE FELLINGS.

342. *Disposal of plantation coupes.*—Plantation coupes will be disposed of by sale in public auction or allotment to industries. Bark and top ends will be sold be sold in auction by the District Forest Officer in case of allotment to industries.

343. *Felling season and lease period.*—The felling season will be between the beginning of June and the end of February with a view ensuring good coppice regeneration of the clear-felled plantation subject to circular instructions in force at the time regarding the lease period which is fixed in relation to the area of the coupe.

344. *Felling rules.*—As regeneration of the felled coupes will be mainly by coppice it is essential that the following felling rules be strictly folllwed by the felling contractor :

(i) The trees will be felled only by saw, the cut made being slanting to prevent water stagnation on the stump.

(ii) Care will be taken when sawing to prevent fraying of the bark on the stump.

(iii) The stump shall not be more than 15 cm. at its highest point from ground level.

(iv) No slash shall be heaped on or in the vicinity of the stump.

(v) Felling and removal will commence from the farthest end of the coupe and proceed uniformly towards the nearest end.

SECTION 6—TABULAR STATEMENT OF FELLINGS.

345. The following statement shows the details of plantations to be sold for exploitation during the period of this working plan in each series :

TABULAR STATEMENT OF FELLING OF EUCALYPT PLANTATIONS.

Year of Felling.	*Name of series.*	*Name and year of Plantation*	*Extent in hectares.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
1976-1977	Tiruvallur	Palavakkam, 1967	21·04	....
		Nemalur, 1967	26·71	....
		Mylapore, 1967	30·22	....
		Siruvada, 1967	16·19	..
	Tambaram	Gudalur, 1957	4·05	Second rotation.
		Gudalur, 1965	2·02	....
		Gudalur, 1967	33·67	....
		Vattambakkam, 1967	19·63	....
		Vadakkupattu, 1967	14·32	....
		Nanmangalam, 1967	13·42	...
		Maduraipakkam, 1967	41·20	....
	Kelambakkam	Tirutheri, 1961	2·43	....
		Sengundram, 1967	15·38	...
		Sirukundram, 1967	25·29	....
		Kolathur, 1967	37·88	....
	Chingleput	Appur Bits I & II 1967	45·52	...
		Paranur, 1958	6·07	Second rotation.
	Madurantakam	Kattugudalur, 1967	20·23	..
		Gudalur 'A' 1967	51·31	....
		Navalur, 1967	24·28	....
	Tiruvallur	Nemalur, 1968	25·98	....
		Siruvada, 1968	16·35	....
		Palavakkam, 1968	63·41	.....
		Vengal, 1968	56·12	...

TABULAR STATEMENT OF FELLING OF EUCALYPT PLANTATIONS—*contd*.

Year of Felling. (1)	*Name of series.* (2)	*Name and year of Plantation.* (3)	*Extent in hectares.* (4)	*Remarks.* (5)
	Tambaram, ...	Maduraipakkam, 1968	10·93	....
		Vattambakkam, 1968	12·84	....
		Vadakkupattu, 1968	15·04	....
	Kelambakkam ..	Anjur, 1968	26·33	....
		Kolathur, 1968	40·96	....
	Chingleput	Appur, 1968	36·10	....
		Kavanipakkam, 1968	36·26	....
1976–77 ..	Madurantakam ..	Rajapalayam, 1968	16·35	....
		Thottacheri, 1968	58·62	....
		Kattur, 1968	27·11	....
		Alathur Bits I and II 1968	91·14	....
		Oragadam Bits I and II, 1968 ..	28·41	....
1977–78 ..	Tambaram	Vattambakkam, 1969	9·16	.. .
		Muduraipakkam, 1969	6·80	....
	Kelambakkam ..	Kolathur, 1969	42·80	....
		Anjur, 1969	21·60	....
		Vallam, 1969	18·16	....
	Chingleput	Kavanipakkam, 1969	29 00	....
		Appur, 1969	30·00	...
	Madurantakam ..	Gudalur 'A' 1969	2·80	....
		Illalur, 1969	22·60	...
		Oragadam, 1969	25·62	...
1978–79 ..	Tambaram	Vattambakkam, 1970	19·36	...
	Kelambakkam ..	Kolathur, 1970	42·80	....
		Anjur, 1970	21·60	....
		Vallam, 1970	20·00	....
	Chingleput	Salur Bits I and II, 1970	20·00	....
		Appur, 1970	30·00	
	Madurantakam ..	Thottacheri, 1963	81·34	Second rotation.
1979–80 ..	Tiruvallur	Panchali, 1961	8·09	Do.
	Tambaram	Vandalur, 1959	8·90	Do.
		Mannur, 1957 . . .	4·05	Do.
		Mannur, 1958	4·05	Do.
		Mannur, 1959	8·09	Do.
		Gudalur, 1959	4·05	Do.
		Mannur, 1960	8·90	Do.
		Gudalur, 1960	4·05	Do.
		Gudalur, 1961	4·05	Do.
		Mannur, 1961 ..	8·09	Do.
		Nanmangalam, 1961 ..	7·59	Do.
		Vattambakkam, 1971 ..	13·00	Do.

TABULAR STATEMENT OF FELLING OF EUCALYPT PLANTATIONS—*contd*,

Year of Felling.	*Name of series.*	*Name and year of Plantation.*	*Extent in hectares.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
1979-80 ..	**Chingleput**	Paranur 1959	**7.69**	**Second** rotation.
		Tirukalikundram 1960	8.09	**Do.**
		Appur 1971	30.00	
	Madurantakam ..	Alathur 1958	2.02	Second rotation.
		Kattur 1961	8.09	Do.
1980-81 ..	Tambaram	Vattambakkam 1972	17.75	
		Gudalur 1972	4.00	
	Kelambakkam ..	Sirukundram 1972	35.30	
	Chingleput	Tirukalikundram 1961	8.09	Second rotation.
		Tirukalikundram, 1962	8.50	Do.
		Tirukalikundram, 1963	8.50	Do.
		Appur 1972	37.76	
		Kattankolathur 1972 ..	12.10	
	Madurantakam ..	Thandalam 1962	20.23	Second rotation.
		Rajapalayam 1972	25.55	Do.
		Oragadam 1972	28.90	Do.
		Alathur 1972	4.50	Do.
		Navalur Bits I and II 1972 ..	20.61	Do.
1981-82 ..	Tiruvallur	Panchali Bits I and II 1962 ..	89.03	Second rotation.
		Peddapullur 1962	8.09	Do.
		Panchali 1963	30.76	Do.
		Peddapullur 1963	82.96	Do.
		Peddapullur 1973	35.00	Do.
	Tambaram	Gudalur 1962	6.47	Second rotation.
		Mannur 1962	8.09	Do.
		Nanmangalam Bits I and II 1962	49.98	Do.
		Vattambakkam 1973	17.40	Do.
	Kelambakkam ..	Mambakkam 1960	4.05	Second rotation.
		Tirutheri 1962	8.09	Do.
		Sirukundram 1963	8.09	Do.
		Tirutheri 1963	23.83	Do.
		Thaiyur 1963	60.70	Do.
		Mambakkam 1964	19.83	Do.
	Chingleput	Kattankolathur 1962	18.62	Do.
		Paranur 1973.	2.10	Do.
		Appur 1973 ..	20.00	Do.
	Madurantakam ..	Kattur 1962 .	7.69	Second rotation.
		Kattugudalur 1962	4.12	Do.

TABULAR STATEMENT OF FELLING OF EUCALYPT PLANTATIONS—*contd.*

Year of Felling. (1)	*Name of series.* (2)	*Name and year of Plantation.* (3)	*Extent in hectares.* (4)	*Remarks.* (5)
1981-82	Madurantakam	Thottacheri 1962	40.47	Second rotation.
		Kattur 1963	19.83	Do.
		Kattugudalur Bits I and II 1963	56.66	Do.
		Oragadam 1973	34.30	
		Nemmeli 1973	36.00	
1982-83	Tiruvallur	Palavakkam 1963	30.35	Second rotation.
		Peddapullur 1964	63.13	Do.
		Erumaivettipalayam 1964	4.05	Do.
		Palavakkam 1964	41.28	Do.
		Palavakkam 1965	21.57	Do.
		Nemalur 1965	22.26	Do.
		Mailapore 1965	20.64	Do.
		Allikuli 1965	20.64	Do.
		Siruvada 1965	29.54	Do.
		Palavakkam 1966	21.45	Do.
		Mailapore 1966	29.95	Do.
		Nemalur 1966	22.26	Do.
		Siruvada 1966	20.64	Do.
		Peddapullur 1974	30.90	
	Tambaram	Gudalur 1963	4.05	Second rotation.
		Maganiam 1963	23.47	Do.
		Vattambakkam 1963	29.54	Do.
		Nanmangalam 1964	8.90	Do.
		Maduraipakkam 1964	21.04	Do.
		Vandalur 1965	21.04	Do.
		Vattambakkam 1965	19.38	Do.
		Nanmangalam 1965	21.04	Do.
		Vadakkupattu 1965	29.95	Do.
		Vattambakkam 1966	35.97	Do.
		Vadakkupattu 1966	19.02	Do.
		Vattambakkam 1974	21.90	
	Kelambakkam	Tirutheri 1964	10.93	Second rotation.
		Vallam Bits I and II 1964	23.27	Do.
		Sengundram 1965	19.83	Do.
		Mambakkam 1965	20.23	Do.
		Thaiyur 1965	20.23	Do.
		Mambakkam 1966	19.83	Do.
		Kolathur 1966	20.23	Do.

TABULAR STATEMMNT OF FELLING OF EVCALLYPT PLANTATIONS—*contd,*

Year of Felling	*Name of Series*	*Name and year of Plantation*	*Extent in hectares*	*Remarks*
(1)	(2)	(3)	(4)	5)
1982-83	Chingleput	Kattankolathur	9.02	Second rotation
		Edamachi 1964	37.63	Do
		Tirukalikundram 1964	20.23	Do
		Kavanipakkam 1965	22.66	Fo
		Kattankolathur 1965	4.05	Do
		Tirukalikundram Bits I and II 1965	28.73	Do.
		Appur Bits I and II 1966	39.66	Do.
		Salur 1966	30.35	Do
		Appur 1974	21.90	
	Madurantakam	Kattur 1964	20.23	Second rotation
		Alathur 1964	21.85	Do.
		Acharapakkam 1964	4.86	Do.
		Thottacheri 1964	86.60	Do.
		Kattur Bits I and II 1965	10.12	Do.
		Thandalam 1965	29.95	Do.
		Rajapalayam 1965	21.45	Do.
		Chittarkadu 1965	19.12	DS.
		Thottacheri 1965	39.25	Do.
		Kattur Bits I and II 1966	35.62	So.
		Thandalam 1966	39.66	Do.
		Nemmeli 1974	30.60	
1983-84	Tiruvallur	Vengal 1967	38.32	Do.
		Peddapullur 1975	20.00	Do.
		Karthikeyapuram 1975	19.40	
	Tambaram	Vandalur Bits I and II 1966	19.83	Second rotation.
		Maduraipakkam 1966	40.47	Do.
		Vattambakkam 1975	24.00	
	Kelambakkam	Sengundram 1966	23.07	Second rotation.
	Chinglput	Salur 1967	37.15	Do.
		Appur 1975	33.10	Second rotation.
	Madurantakam	Rajapalayam 1966	40.47	Do.
		Thottacheri 1966	17.40	Do.
		Illalur 1967	18.48	Do.
		Kattur 1967	24.36	Do.
		Nemmeli 1975	31.20	
		Gudalur B' 1975	**30.00**	

TABULAR STATEMENT OF FELLING OF EUCALYPT PLANTATIONS—*contd.*

Year of Felling.	*Name of Series*	*Name and year of Plantation.*	*Extent in hectares.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
1984–85 ..	Tiruvalur	Palavakkam 1967	21.04	Second rotation.
		Nemalur 1967	26.71	Do.
		Mailapore 1967	30.22	Do.
		Siruvada 1967	16.19	Do.
	Tambaram	Gudalur 1957	4.05	Third rotation.
		Gudalur 1965	2.02	Second rotation.
		Vattambakkam 1967	19·63	Do.
		Vadakkupattu 1967	13.42	Do.
		Maduraipakkam 1967	41.20	Do.
	Kolambakkam ..	Tirutheri 1961	2.43	Do.
		Sengundram 1967	15.38	Do
		Sirukundram 1967	25.29	Do
		Kolathur 1967	37.88	Do
	Chingleput	Appur Bits I and II 1967 ..	45.52	Do
		Paranur 1958..	6.07	Third rotation.
	Madurantakam ..	Kattugudalur 1967	20.23	Second rotation.
		Gudalur 'A' 1967	51.31	Do.
		Navalur 1967	24.28	Do
	Tiruvallur	Nemalur 1968	25.98	Do
		Siruvada 1968	16.35	Do
		Palavakkam 1968	63.41	Do
		Vengal 1968	56.12	Do
	Tambaram	Maduraipakkam 1968	10.93	Do
		Vattambakkam 1968	12.84	Do
		Vadakkupattu 1968	15.05	Do
		Vattambakkam 1976	22.08	Do.
	Kolambakkam ..	Anjur 1968	26.33	Second rotation.
		Kolathur 1968	40.96	Do.
	Chingleput	Appur 1968	36.10	Do.
		Kavanipakkam 1968	36.26	Do.
	Madurantakam ..	Rajapalayam 1968	28.00	Do.
		Thottacheri 1968	58.62	Do.
		Kattur 1968	27.11	Do.
		Alathur Bits I and II 1968 ..	91.14	Do.
		Oragadam Bits I and II 1968 ..	28.41	Do.
[illegible] ..	Tambaram	Vattambakkam [illegible]	[illegible]	Second rotation.
		Maduraipakkan 1969	6.80	Do.
		Mannur 1977	33.95	

TABULAR STATEMENT OF FELLING OF EUCALYPT PLANTATIONS—*contd,*

Year of Felling. (1)	*Name of Seriet* (2)	*Name and year of Plantation.* (3)	*Extnt in hectares.* (4)	*Remarks.* (5)
	Kelambakkam	Kolathur 1969	42.80	Second rotation.
		Anjur 1969	21.60	Do.
		Vallam 1969	18.16	Do.
		Vallam 1977	20.43	
		Anjur 1977	24.00	
		Kayar 1977	45.08	
	Chingleput	Kavanipakkam 1969	29.00	Second rotation.
		Appur 1969	30.00	Do.
		Appur 1977	26.80	
	Madurantakam	Gudalur 'A' 1969	2.80	Second rotation.
		Illalur 1969	22.60	Do.
		Oragadam 1969	22.62	Do.
		Navalur 1977	26.90	
		Gudalur 'B' 1977	14.64	
		Koliyalam 1977	35.40	
		Maiyur 1977	22.54	

SECTION 7—REGULATION OF REGENERATION OPERATOINS.

346. *Survey and temporary demorcation of the annual regeneration area.*—The annual regeneration area will be laid out on the ground in accordance with its lay in the detailed management map. While surveying the coupe 2metre wide lines will be cleared along its periphery and small white washed cairns constructed at its salient points by way of temporary demacrcation. Survey and temporary demarcation will be completed by the end of March of the year of planting.

347. *Preparation of the regeneration area.*—The regeneration area will be clearfelled, the stumps uprooted and all the slash burnt. This work should be completed by the end of May of the year of planting. Thereafter, with the first showers in June, the area will be tractor ploughed steps being taken at the same time to grub out and remove the roots that are thrown up at the time of ploughing to prevent them from resprouting.

348. *Espacement.*—The espacement to be adopted will be 2 metres by 2 metres but for miscellaneous species in unsuitable patches 3.5 metres by 3.5 metres.

349. *Regulation of yield.*—Regulation of yield will be by area.

350. *Aligning, marking and pitting.*—Aligning marking and pitting will be taken up immediately after plouging. The size of the pits will be 30 centimetre cube but for miscellaneous species 40 centimetre cube.

351. *Planting season.*—The planting season will commence from June-July depending on the adequacy of rain for the purpose. It is stressed that the best results are achieved only by planting at the onset of the south-west monsoon which coincides with the commencement of the growing season.

The polipot will be removed completely just before planting; and after planting the refilled soil will be firmly tamped with the sides of the feet to ensure firm contact of the new soil with the root hairs of the transplant taking due care in the process not to apply pressure on top of the column of earth enshrouding its root system.

352. *Planting portions unsuited to Eucalypt.*—Portions unsuited to Eucalypt occurring in the annual regeneration area will be planted with other species. Saline alkale sites will be planted with Acacia leucophloea while water-logged sites will be planted with Acacia arabica adopting espacement and pit size noted in paragraphs 349 and 351 respectively.

SECTION 8—TABULAR STATEMENT OF PLANTING.

353. The following staement gives details of the areas to be planted annually in each felling series.

Name of felling series and extent of annual regeneration areas.

Year of planting.	*Tambaram series.*		*Kelambakkam series.*		*Chingleput series.*		*Madurantakam series.*	
	Name of R.F.	*Area in hectares.*	*Name of R.F.*	*Area in hectares.*	*Name of R.F.*	*Area in hectares.*	*Name of R.F/R.L.*	*Area in hectares.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1976	Vattambakkam	22·08	....	..	....	..	.. .. ..	
1977	Manur	33·95	Vallam	20·03	Appur	26·80	Nemmeli	28·00
			Anjur	24·00	Thirumani	16·00	Navalur	26·90
			Kayar	45·08	....	..	Gudalur 'B'	14·64
							Koliyalam	35·40
							Maiyur	22·54
1978	Manur	23·39	Vallam	11·89	Appur	32·69	Navalur	22·10
			Anjur	16·00	....	..	Gudalur 'B'	14·50
			Kayar	45·02	....	..	Koliyalam	34·10
1979	Mannur	24·89	Kayar	45·30	....	..	Gudalur 'B'	14·60
			Sengundram	24·00	....	..	Koliyalam	34·44
1980	Mannur	23·59	Kayar	40·06	....	..	Gudalur 'B'	14·60
							Koliyalam	33·79
1981	....	..	Kayar	42·90	....	..	Gudalur 'B'	14·50
							Koliyalam	35·73
1982	..	..	Kayar	38·65	....	..	Gudalur 'B'	14·50
							Koliyalam	35·86
1983	..	..	Kayar	41·28	....	..	Gudalur	12·30
							Koliyalam	30·68
1984	..	..	Kayar	42·90	....	..	Koliyalam	31·34

SECTION 9—NURSERY.

354. The planting stock will consist of container plants, the containers being polipots of size 15 cm. by 7'50 cm. made from 200 gauge thich polythene sleeves with acouple of small holes punched at the bottom for drainage. The decision to use containers of this size was taken at the VIIIth. Annual Research Committee meeting held at Vedanthangal and necessary orders to this effect were issued by the Chief Corcservator of Forests, Madras in his reference No. 21084; 76 J-4, dated 28th May 1976.

355. The seeding s for pricking out into the cortainers will be raised in nursery beds 10 m. + 1 m. formed at ground level. The beds will be sown in January of the year of planting, the quantity of seed sown per bed being 60 grss Eucalypt seeds being very minute (450 to the grm.), seeds being very minute (450 to the grms.), should be mexed with sand or fine earth before they are broadcast sown in the beds. To prevert ants carrying away the seeds and cuasing low germination percent one teaspoonful of folidol should be mixed in a bucketful of water and the solution sparyed on the bed before sowing. A couple of sprayings after sowing will also be necessary. This treatment will alos ward off any likely chafer attack to the seedlings after germination. No shading of the beds is necessary. A bed will yield about 5,000 to 10,000 seedlings for pricking out.

356. Pricking out should be done when the seedlings have reached the stage when the second or third pair leaves above the cotyledons have made their appearance. The seedlings will then be about 4 cm. to 5 cm. tall. The seedlings should be handled by their leaves and never by their slender and delicate stems and should transplanted at a slightly greater depth than in the bed. The soil used in the contairers will be a red loam with an admixture of well rotted farm yard manure well mixed in the proportion of 4 : 1 before filled in the container.

357. Pricking out should be done in heavy shade and immeately thereafter the containers should be kept in heavy shade which will be removed after the seedlings have established themselves. Watering on non-rainy days will be done with fine-rosed watering cans. Weeding, shifting and grading of contairers plant according to size, timely culling oit of defective plants in the contairers and their replacement, and raising an adequate number of contairer plants for breating up will be the other important items of nursery work to be provided for...

358. Miscellaneous species required for planting up portions of the regeneration area unsuited to Eucalypt will also be raised in containers. In this case, however, the seedling should be a year at the time of planting. The nursery technique prescribed in paragraph 343 under the Afforestation Working Circle will be observed in raising these container plants. In order to reckon the approximate number of container plants that would be necessary for planting out, the Range Officer will perambulate the regeneration area a little more than a year in advance and make the neccessary assessment.

359. Fresh and good quality seed in sufficient quantities will be obtained from the Fores Geneticist, Coimbatore sufficiently early by placing timely indents on him as per the orders of Chief Conservator of Forests in his reference No. K. Dis. 2599;73 E2, dated 10th February s 1973.

SECTION 10—SUBSIDIARY, SILVICULTURAL OPERATIONS.

360. *Replacement of casualities.*—Replacement of casualities will be done during the year before the close of the planting season. As refills of Eucalypt during the second year are ively to catch up with the initial survivals and ultimately get suppressed, no beating up will been n the second year unless considerable mortality has taken place due to reasons other than o unsuitability. Rerding the portions regenerted with miscellaneous species casualities will be placed during the second year.

361. *Weeding and soil-working.*— (i) First Year No weeding and soil working need be done as the regeneration area will be ploughed prior to planting. (ii) Second Year—A patch weeding and soil working will be done to a radius of 0·60 m. and a depth of 15 cm. in July so that the plantation gets the benefits of the South-west monsoon also. Soil working will be done with pickaxes. A little earthing up of the saplings will be done at the same time to help them to stand up to the stro e winds of the north-east monsoon. (iii) Third Year—A patch weeding and soil-working will g done to similar specifications as in the second year around refills of miscellaneous species dur n the second year as well as backward plants.

362. *Climber cutting-Plantations.*—shall always be kept free of climbers and the reponsibility for this work will be that of the Beat subordinate under the supervision of the Section Foresters.

363. *Supplementary artificial regeneration.*—In all felled plantations sizeable blanks will be restocked during the year of felling, Where, however, the Eucalpt failed due to unsutability of the he site the blanks will be restocked with miscellaneous species suited to the particular site.

SECTION 11—OTHER REGULATIONS.

364. *Permanent demarcation of plantations.*—The plantations raised will be demarcated permanently with stone slabs planted at their four salient corners and on which the calendar year of planting and the area in hectares has been insecribed. The inscriptions which will be atleast 8 cm. high and 1 cm. deep will be made on the outer facing of the slabs and painted with tar. Stones planted on common boundaries will have the particulars of the adjacent plantation also inscribed on them. The stone slab will be 1·05 m long, 45 cm. wide and 15 cm. thick,.

365. *Closure to grazing.*—Newly raised plantation will be closed to grazing for a period of 5 years inclusive of the year of planting and felled plantations will be closed for a period of three years inclusive of the year of felling. Extension of the closure period where found necessary is left to the discretion of the District Forests Officer.

366. *Inspection paths*—Permanet inspection paths 2 metres wide will be formed before aligning and marking, and pitting are carried out and kept clear of all growth. They will, as a matter of principal, be laid out in such a manner that they divide the plantations into four more or less equal parts to facilitate not only inspection of the entire plantation but also control over regeneration operations.

367. *Fire protection.*—No special fire protection measures are considered necessary.

SECTION 12—CONTROL.

368. The following control records will be maintained by the Distict Forest Officer and posted annually.

(i) Record of works.

(ii) Register of deviations.

(iii) Control book.

(iv) Control journal.

(v) Nursery and plantation journals.

(vi) Control map.

The manner in which these records are to be maintained is furnished in paragraphs 531 to 543.

CHAPTER IV—WORKING PLAN FOR THE RED SANDERS PLANTATION WORKING CIRCLES.

SECTION 1—GENERAL CONSTITUTION AND CHARACTER OF THE VEGETATION.

369. *General*.—Red sanders—Pterocarpus Sandalinus, Linn-is a small to moderate sized deciduous tree with an erect bole and a rather dense rounded crown. Under natural conditions the tree attains a girth of 0·91 m. to 1·50 m and a height of 9 to 11 metres though in plantations on rich ground a height of 15 to 18 metres would probably be attainable (Troup). The species has a very restricted natural range, extending over and area of only about 15,539 sq. km. in the south-eastern portions of the country. It is found chiefly in the Cuddapah district and extends a short distance into the adjoining districts of Kurnool, North Arcot and Nellore with an outlier in the Kambakkam and Nagalapuram hills formerly in Chingleput District but now in Andhra Pradesh.

370. In its natural state the tree grows typically on dry hilly, often rocky ground, at elevations of 152 to 914 metres above sea-level ; it is sometimes found on precipitous hill sides. It requires perfect drainage, and is found mainly on stony or gravelly soil on formations of geneiss quartizite, shale or laterite. The tree grown particularly well on lateritic loam. It will not tolerate stiff water-logged soil, but has been planted with success on rich alluvial ground.

371. In its natural habitat the tree experiences a comparatively dry hot climate and both the south-west and north-east monsoons. It is a light demander and will not tolerate overhead shade. It coppices vigorously and produces root-suckers freely. It resists fire well, even seedlings escaping serious damage better than most species Young plants are readily brosed by cattle and deer.

372. The wood of the species is extremely hard, dark red to almost black and very valuable As for its utility it is ideally suited for carving and arnamental work. It is used in the manufacture of carved house-posts, agricultural implements, furniture, pestles and toys. It is also good fuel. It has a vast and lucrative export market because of its santalin content and wavy grain. The export demand is from countries such as Japan, Burma, Germany' France, Ceylon, Entland, U.S.A. U.S.S.R. etc., Wavy or ripple grained timber is said to produce resonance pear excellaence and is widely used in Japan for manufacture of its popular musical instrument 'Shamisen' For this purpose the Japanese market requires good wavy grained billcets of 1·25 m length and 20 cm. diameter at the thinner end. The export market classifies the wood in two grades viz. quality wood and nonquality wood. Quality wood is that which has wavy grains and is free from defects such as holes and knots Quality wood is sub-divided into 'A' & 'B' qualities depending on the extent to which wavy grains are present and absence of defectes. On an average the traders in Madras have been exporting 75 tonnes of quality wood and 200 tonnes of non-quality wood annually (Average of figures from 1968 to 1970). The average rate obtained for quality wood is Rs. 5,000.00 and for non-quality wood Rs. 1000·00 to Rs. 1500·00 per ton. If quality 'A' wood is fresh the Japanese offer even upto Rs. 10,000·00 a ton. While quality wood is in great demand in Japan nonquality wood is exported to other countries. The demand for it is however liable to fluctuation. The dye is believed to be used in colouring high class alcoholic liquors.

373. *Objects of management.*—To convert uneconomical scrub forests into valuable timber forests and produce Red sanders timber for meeting both internal and external demand.

374. *General constitution.*—The working circle will include the existing Red sanders plantations, failed plantations of the species which are fit for replanting and new areas for planting.

375. *Area.*—The area of this working cricle is 13·91 sq. km. of which 8·08 sq. km. consists of existing plantations, partially and wholly successful and failed plantations fit for restocking and 5·83 sq.km. of new areas selected for conversion.

376. *Stockmapping.*—Although most of the areas available for planting with the species in Tiruvallur Range have been stockmapped only the areas required for planting during the period of this plan and a period of five years thereafter, in case of delay in revisiong the plan, have been included in this working circle. A statement showing the total approximate area stockmapped and found suitable for planting is furnished below. The figures include areas of existing plantations and failed plantations fit for re-stocking.

STATEMENT OF STOCK MAPPED AREAS.

[illegible]	*Name of R.F./R.L.*	*Approximate plantable area in hectares*
(1)	2)	(3)
	Mailapore	151·45
	Vembedu	169·97
	Malandur	94·02
	Vengal	330·14
Nemalur	Nemalur	194·30
	Palavakkam	163·40
	Siruvada	61·84
	Irugulam	8·50
Poondi	Pullarambakkam	72·00
	Nayapakkam	260·05
Allikuli	Allikuli	224·43
	Pulikundram	600·00

377. *Character of the vegetation.*—The two types of natural forests included in this working circle for conversion are referred to by Champion and Seth as the Southern thorn scrub and Tropical dry evergreen scrub and are described in paragraphs 57 and 59 respectively. Both the types represent the degraded form of their original types. The soil is generally a red gravelly loam.

SECTION 2—DIVISION OF THE AREA.

378. *Division into planting series.*—This being the first time that a working cricle has been constituted for the management of plantations of the species in this division no series were formed in the past. Based on ease of management and geographic contiguity four planting series have been formed. A statement showing the distribution of the series and their areasis furnished below :—

STATEMENT SHOWING DISTRIBUTION OF THE SERIES.

Serial number and Name of series.	*Area already planted in hectares.*	*Area to be planted in hectares.*	*Total area of series in hectares.*
(1)	(2)	(3)	(4)
1. Mailapore series	356·34	193·80	550·14
2. Nemalur series	327·70	100·34	428·04
3. Poond series	20·00	146·81	166·81
4. Allikul series	Nil.	246·43	246·43
Total	704·04	687·38	1,391·42

379. All the existing plantations and the annual areas to be plantedup have been marked on the detailed management maps.

380. *Constitution of planting series.*—A list of existing plantations and future areas for planting for a period of 15 years constituting each setirs is furnished in the subjoined statement :

TABULAR STATEMENT OF DIVISION OF THE AREA INTO SERIES.

Mailapore series,			*Nemalur series.*			*Poondi series.*			*Allikuli series.*		
Name and year of plantation.	*Area planted in hectares.*	*Area to be planted in hectares.*	*Name and year of plantation.*	*Area planted in hectares.*	*Area to be planted in hectares.*	*Name and year of plantation.*	*Area planted in hectares*	*Area to be planted in hectares.*	*Name and year of plantation.*	*Area planted in hectares.*	*Area to be planted in hectares*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Mailapore, 1958	2·02	..	Nemalur, 1969 ..	25·50	..	Pullarambakkam-1970	20·00	..	....	..	..
Mailapore, 1959	2·02	..	Palavakkam, 1969 ..	8·40	..	Pullarambakkam-1977	..	12·00	Allikuli-1977 to 1990	..	206·43
Mailapore, 1960	2·02	..	Palavakkam, 1970 ..	18·00	..	(Failed plantation of 1973).	..	..	....	..	..
Mailapore, 1961	2·02	....	Nemalur, 1970 ..	25·00	..	....	..	..	....	..	..
Mailapore, 1965	10·12	..	Nemalur, 1971 ..	25·00	..	Nayapakkam 1978 to 1990	..	134·81	....	..	..
Mailapore, 1966	9·71	..	Palavakkam, 1971 ..	19·00	..	....	..	..	....	..	..
Mailapore, 1967	8·66	..	Palavakkam, 1972 ..	16·00	..	....	..	..	....	..	..
Vengal, 1968	4·21	..	Nemalur, 1972 ..	10·00	..	....	..	..	....	..	..
Mailapore, 1968.. ..	10·22	..	Nemalur, 1973 ..	27·00	..	....	..	..	....	..	..
Mailapore, 1969	11·25	..	Palavakkam, 1973 ..	51·80	..	....	..	..	....	..	..
Vengal, 1969	30·76	..	Nemalur, 1974 ..	27·10	..	....	..	..	....	..	..
Mailapore, 1970	10·93	..	Nemalur, 1975 ..	24·70	..	....	..	..	....	..	..
Vengal, 1970	8·75	..	Palavakkam, 1975 ..	50·20	..	....	..	..	....	..	..
Malandur, 1970	11·75	..	Nemalur, 1976 ..	..	30·00	....	..	..	....	..	..
Mailapore, 1971	10·00	..	Siruvada, 1977 ..	..	6·48	....	..	..	....	..	..
Vengal, 1971	21·20	..	(Failed plantation of 1964).	..	..	....	..	..	....	..	..
Malandur, 1971	16·00	..	Siruvada, 1978 ..	..	6·07	....	..	..	....	..	..
Mailapore, 1972	12·00	..	(Failed plantation of 1965).	..	..	....	..	..	....	..	..
Malandur, 1972	17·80	..	Siruvada, 1979 ..	..	9·31	....	..	..	....	..	..

Vengal, 1972	..	21·40	..	(Failed plantation of 1966).	..	..	....	..	..	....	..	..
Mailapore, 1973	..	10·00	..	Siruvada, 1980 ..	..	9·31	....	..	..	....		..
Vengal, 1973	..	21·40	..	(Failed plantation of 1967).	..	..	....	..	..	....	..	..
Malandur, 1973	..	26·00	..	Siruvada, 1981 ..	..	9·87	....	..	..	....	..	..
Vengal, 1974	..	15·00	..	(Failed plantation of 1968).	..	..	....	..	..	....	..	..
Mailapore, 1975	..	29·10	..	Siruvada, 1982 ..	..	10·00	....	..	..	....	..	..
Vengal, 1975	..	32·00	..	(Failed plantation of 1969 Part).	..	..	....	..	..	....	..	..
Melandur, 1976	..	..	12·08	Siruvada, 1983 ..	..	10·80	....	..	..	....	..	..
Vengal Bit I, 1976	..	..	12·65	(Failed plantation of 1969 Part).	..	..	....	..	..	....	..	..
Vengal Bit II, 1976	..	..	8·90	Irugulam, 1984 ..	..	8·50	....	..	..	....	..	..
Malandur, 1977	..	..	16·19	(Failed plantation of 1974).	..	..	....	..	..	....	..	..
Mailapore, 1978 (Failed plantations of 1962 and 1963).		..	12·07	....	..	..	....	..	..			..
Mailapore, 1979 (Failed plantation of 1964).		..	9·31	....	..	..	....	..	..			
Vembedu, 1980 to 1990		..	122·60	....	..	..	....	..	..			

SECTION 3—ANALYSIS AND VALUATION OF THE CROP.

381. Except for some of the plantations the other plantations raised in Tiruvallur Range have been quite successful. Failure, wherever it has occurred, has generally been due to cattle damage and hence the restocking of some of these areas, where the edaphic factors are favourable, after fencing them is prescribed. The best performance of the species has been on red leamy soil in Mailapore R.F. but in the same reserved forest where laterisation is noticed the rate of growth is rather slower. A partial (ten per cent) linear enumeration survey was taken up in the earlier plantations in Mailapore R.F. to assess the survival percent and growth rate and the results are furnished in paragraph 278.

382. *Stockmapping.*—The areas included in this working circle for conversion have been occularly stockmapped and only such areas as have been found suitable for planting with Red sanders have been included. The areas do not contain any saleable growth.

SECTION 4—METHOD OF TREATMENT.

383. *Silvicultural system.*—The silvicultural system prescribed is the clearfelling system—followed by concentrated artificial regeneration. Regarding the existing plantations they will be effectively protected and thinned.

384. *Choice of species.*—The species prescribed for planting is Pterocarpus santalinus.

385. *Rotation.*—As already pointed out the Japanese market is the most highly prized and lucrative and hence the main objective is to cater to the damands of that market. At the same time it is only the heartwood that is of value as a consequence of which, the rotation would be the one of greatest volume production of heartwood or that of the highest income which ever is later. Unfortunately no data is available to indicate as to what the overall girth should be when the heartwood reaches exploitable girth. Troup has quoted whitehead as saying that a tree seventy to eighty years old, which as a rule average 40 to 50 inches (101·6 to 127 cm.) in girth at B.H. may be said to have attained exploitable age, that is, the age at which it is capable of yielding a specia house post. It is presumed that this should also be the size suitable for export. As no plantatiol will come up for clearfelling during the period of this plan the fixation of the rotation is left an open question in this plan.

386. In the above connection it is suggested that if the State Silviculturist is not already seized of the problem of determining the rotation for the species the District Forest Officer may lay out sample plots and record increment data so that after two or three decades a tentative rotation on the basis of projected figures can be worked out.

387. *Regulation of yield.*—Regulation of yield will be by area.

388. *Annual planting area.*—The total planting area during the period of this plan is assessed at 687·38 ha. distributed over the four series. The annual area in each series is restricted to about 15·00 ha. due to the slow growing nature of the species and its proneness to cattle damage. (Across the border, in Chittoor East Division, the extent of the annual area is only about 4·00 hectares)

SECTION 5—TABULAR STATEMENT OF PLANTING.

389. The following statement gives details of areas to be regenerated annually in each series during the perod of this plan.

TABULAR STATEMENT OF PLANTING.

Name of planting series and extent of annual regineration areas.

Year of planting.	Mailapore series		Namalur series.		poondi series.		Allikuli series.	
	Name of R.F./R.L.	Area in hectares.	Name of R.F./R.L.	Area in hectares.	Name of R.F./R.L.	Area in hectares.	Name of R.F./R.L.	Area in hectares.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1976	Malandur	12·08	Nemalur	30·00	....		....	
	Vengal Bit I	12·65			....		....	
	Vengal Bit II	8·90			....		....	
1977	Malandur	16·19	Siruvada (Failed plantation of 1964).	6·48	Pullarambakkam (Failed Plantatation of 1973).	12.00	Alliknli	16·00
1978	Mailapore (Failed plantation of 1962 and 1963).	12·07	Siruvada (Failed plantation of 1965).	6·07	Nayapakkam	10·24	Allikuli	16·00
1979	Mailapore (Failed plantation of 1964).	9·31	Siruvada (Failed plantation of 1966).	9·31	Nayapakkam	10·12	Allikuli	16·00
1980	Vembedu	10·52	Siruvada (Failed plantation of 1967).	9·31	Nayapakkam	10.32	Allikuli	17·00
1981	Vembedu	11·33	Siruvada (Failed plantation of 1968).	9·87	Nayapakkam	10·60	Allikuli	14·57
1982	Vembedu	11·35	Siruvada (Failed plantation of 1969 Part).	10·00	Nayapakkam	10·40	Allikuli	14·57
1983	Vembedu	11·00	Siruvada (Failed plantation of 1969 Part).	10·10	Nayapakkam	10·12	Allikuli	15·87
1984	Vembedu	11·02	Irugulam (Failed plantation of 1974).	8·50	Nayapakkam	11·00	Allikuli	14·57
1985	Vembedu	10·12	....		Nayapakkam	10·89	Allikuli	14·57
1986	Vembedu	10·27	....		Nayapakkam	9·31	Allikuli	14·57
1987	Vembedu	10·32	....		Nayapakkam	10·68	Allikuli	14·57
1988	Vembedu	12·95	....		Nayapakkam	10·24	Allikuli	12·14
1989	Vembedu	11.94	....		Nayapakkam	9·11	Allikuli	10·00
1990	Vembedu	11.78	....		Nayapakkam	11·78	Allikuli	10.00

SECTION 6—REGULATION OF REGENERATION OPERATIONS.

390. *Survey and demarcation of the annual regeneration area.*—The annual regeneration area will be laid out on the ground in accordance with its lay out in the detailed management map. While surveying the coupe 2 metre wide lines will be clearned along its periphery and small white-washed cairns constructed at its salient points by way of temporary demarctaion. Survey and temporary demarcation will be completed by the end of March of the year of planting.

391. *Preparation of the regeneration area.*—The regeneration area will be clearfelled, the stumps uprooted and all the slash burnt. This work should be completed by the end of May of the year of planting. Thereafter, with the first showers in June, the area will be tractor ploughed, steps being taken at the same time to grub out and remove the roots that are thrown up at the time of ploughing to prevent them from resprouting.

392. *Espacement.*—The espacement to be adopted will be 3 metres by 3 metres.

393. *Aligning, marking and pitting.*—Aligning, marking and pitting will be taken up immediately after ploughing so that the soil excavated from the pits gets some time to weather. The size of the pits will be 30 centimetres cube.

394. *Fencing.*—Young plants of the species are readily grazed by cattle with the result that the plantations in Siruvada and some of those in Mailapore and Pullarambakkam failed badly. Hence, while fencing is not ordinarily interded to be done it will be done wherever necessary so that the excuse of cattle damage for failure does not have to be accepted in future. The fence, wherever erected, will be of four or more strands of barbed wire as the situation may demand. It will be effectively maintained and kept in positition as along as the plantation is closed to grazing. Wherever it is decided to go in for fencing, the fence will be raised as tractor ploughing progresses and in any case before planting is taken up.

395. *Planting season.*—The planting season will commence from June—July depending on the adequacy of rain for the purpose. It hardly needs to be emphasisd that the best results are achieved only by early planting i.e., at the onset of the south-west monsoon which coincides with the commencement of the growing season. Planting is best done on rainy days.

396. *Planting technique.*—The polipot will be completely removed before planting taking care in the process not to distrub the column of earth around the stump. After the excavated soil has been refilled it should be well tamped from the sides and never should pressure be applied on top of the column of earth enshrouding the stump.

SECTION 7—NURSERY.

397. *General.*—The nursery stock for planting out will consist of nineteen to twenty month old nursery raised stumps which have been transplanted in polipots and nurtured in the containers for at least four months.

398. *Location of nurseries.*—The present practice of having small nurseries located near the planting sites will be continued as there is no developed central nursery for the purpose in Tiruvallur Range.

399. *Seed collection.*—Fresh seed from healthy middle aged trees should alone be collected for use. The period of collection is April-May when the seeds ripen and are brown in colour. The pods are 5 to 5·50 cm. in diametre including the wing which separately measures about 2 to 250 cm. The central portion which is hard and bony contains the seeds. The seeds weigh about 1,250 to a kilogram on an average. The germination per cent of the seeds is poor being 25 to 30 although it is said that if the seed is sown fresh it is as high as 70. The quantity of seed to be sown per standard sized bed of 12 m. by 1·2 m. is 10 kilograms. The bed will be raised to height of 30 c.m. ; the saids being supported with brushwood. The soil for the beds will be red loam mixed with well rotted farmyard manure in the proportion of 1 : 3. Pretreatment the seed will consist of immersing it in a solution of cow dung and water for 48 hours before sowing. Sowing will consist of even placement of the seed over the bed and covering the same with a layer of fine soil 5 mm. thick. After sowing, thin sticks will be placed at regular intervals across the bed, a light layer of brushwood or straw spread evenly over this frame work and the beds watered with watering cans twice a day. Germination sets in 10 to 20 days when the brushwood cover is removed in into and watering is reduced to once a day on non-rainy days. A bedshould yield about 2,000 good stumps.

400. Assuming that the nursery was raised in June and planting is to commence in the month of July stumping and transplanting of stumps in the polipots will be done in the month of January of the year of planting. The polipots will be of 25 cm. X 13 cm. size and made of 200 gauge. thick polythene sleeves with a couple of small holes punched at the bottom for drainage. The potting mixture will be red loam well mixed with well rotted farmyard manure in the proportion of 1 : 4. Since transplanting in the containers will be done during the dry weather watering will be done twice till the stumps strike root. Thereafter, watering may be reduced to once a day. At least 20 per cent more nursery stock will be raised for beating up.

401. The nursery beds and container plants will invariably be kept free from weeds, the weeding being done by the watering mazdoors after watering the nursery. Plant protection measures will be adopted if any pest attack is noticed.

402. The container plants will be well watered just before being despatched to the generetion area for being put out. Backward plants will be retained in the nursery and used later on for replacement of casualities, by which time they would have developed further. The use of little fertiliser to increase their rate of growth is suggested. This can be done through the application of a 5 per cent urea foliar spray. The formula for preparing the 55 per cent solution for spraying is as follows : Dissolve 750 grams of Urea in 20 litres of water by heating. Add 2 litres of thus solution to 12·50 litres of water. Spraying should be done thrice at 7 to 10 day intervals. Every nursery will be equiped with a hand operated sprayer which, to Government departments, is sold at a discount by the Panchayat Unions.

SECTION 8—SUBSIDIARY SILVICULTURAL OPERATION.

403. *Weeding and soil-working.—*

*First year.—*Patch weeding and soil-working will be done to a radius of 60 cm. and depth of 15 cm. around the plants only in regeneration areas or portions of regeneration areas where tractor ploughing is not possible due to the bouldery nature of the soil or undulating nature of the terrain. Weeding will entail uprootal of the weeds and soil-working will be done with pickaxes.

*Second year.—*A patch weeding and soil-working will be done to the aforssaid specifica tions at the onset of the south-west monsson irrespective of whether the plantation was tractor ploughed or not in the first year.

*Third year.—*Will be done if found necessary.

404. *Replacements of casualities.—*Replacement of casulaties will be done in the first year during the south-west and north -east monssoons as and when they occur. The work should be completed within a fortnight of the north-east monsoon setting in. Beating up will also be done in the second year. Thereafter, no such work will ordinarily be needed. In fact during the second year replacements should be negligible if the regeneration technique is rigidly followed.

405. *Reclearing of rank growth.—*Reclearing of rank growth will be done during the third year if necessary.

406. *Thinning.—*According to Troup experience gained in the 1865 Kodur plantation in Cuddapah district showed that trees of the species required an abundance of growing space and room for crown development for their proper growth ; in other words, regular thinnings were required to promote the best growth.

407. The firsht thinning will be mechanical amounting to the removal of 50 per cent of the steams. Based on the principle that the resulting espacement after thinning should not exceed one third the height of the dominants and starting with an espacement of 3m. X 3 m. the first thinning will be done when the dominants attain a height of 12·75 metres. The number of trees left after the first thinning will be 555 at an espacement of 2·4 m X 6·0 m.

408. Based on the same principle referred to above the second thinning would becom due when the stems reach a height of 18 metres which is about the maximum height they may attain. according to Troup, in plantations raised on rich ground. It is not known at what age this height would be reached but considering it is the maximum height attainable it is presumed that it will be reached after mid rotation age by which time thinning in a crop should be completed. Hence, it cannot be predicted at this stage as to whether a second thinning would be necessary at any stage or whether all that would be necessary is only an increment felling in its stead which incidentally, would also induce natural regeneration and help to switch over to the more desirable sheltrewood system from the second rotation onwards. As the matter can be decided only after watching the preference of the plantations the matter is left to be decided by the District Forest Officer at the appropriate time in consultation with the Conservator of Forests.

409. For want of particulars on the rate of growth of the species it is not possible to lay down the age at which the plantations will come up for thinning. Further, none of the plantations in the division have been thinned as yet. The District Forest Officer, will therefore, watch the performance of plantations and carry out thinning when the plantations become ripe for it. Thinning will be done by an officer not below he rank of an Assistant Conservator of Forests.

410. A problem one is likely to encounter, as in the 1958 Mailapore plantation, is that of non uniformity in the rate of growth due to micreo variations in edaphic factors with the result that different portions of a plantation become due for thinning at different times. In such a contigency the District Forest Officer will thin the portion requiring thinning and postpone thinning in the remaining portion until it becomes due. In such cases he will record detailed remarks in the plantation and control journals duly indicating therein, the year in which he believes the unthinned portion is likely to become due for thinning and carry out the thinning when necessary In such cases the District Forest Officer will also mark on a sketch of the plantation the portion thinned by him and affix it in the plantation journal so that the different quality classes can be identified and a qualiity class map for each plantation prepared ultimately.

411. *Climber cutting.*– The plantations shall always be kept clear of claimbers and the responsibility for this work will be that of the Beat subordinates under the supervision of the Section Foresters.

SECTION 9– OTHER REGULATIONS.

412. *Permanent demarcation of plantations.*– The plantations raised will be demarcated permanently with stone slabs planted at their four salient corners and on which the calender year of planting and the area in hectares has been inscribed. The inscriptions which will be at least 8 cm. high and 1 cm. deep will be made on the outer facing of the slabs and painted with tar. Stones planted on common boundaries will have the particulars of the adjacent plantation also inscribed on them. The stone slabs will be 1·05 m. long, 45 cm. wide and 15 cm. thick.

413. *Closure to grazing.*– Since the species is slow grown and prone to severe cattle damage plantations will be closed to grazing for a period of 10 years inclusive of the year of planting. Extension of the closure period where found necessary is left to the discretion of the District Forest Officer.

414. *Fire protection,*– No special fire protection measures are necessary except that the 2 metre wide exterior boundaries of the plantations will be kept clear of all growth.

415. *Jeep track and Inspection paths.*– All series will have a Jeep track. Plus, 2 metre wide inspection paths branching out from the jeep track will be laid out and maintained. The 2 metre wide internal boundary lines will also be kept clear to serve as inspection paths.

SECTION 10– CONTROL.

416. The following control records will be maintained by the District Forest Officer and posted annually :

(i) Record of works.

(ii) Register of deviations.

(iii) Control book.

(iv) Control journal.

(v) Nursery and Plantation journals.

(vi) Control map.

The manner in which these records are to be maintained is furnished in paragraphs 531 to 543.

CHAPTER V.

WORKING PLAN FOR THE AFFORESTATION WORKING CIRCLE.

SECTION 1.

GENERAL CONSTITUTION OF THE WORKING CIRCLE AND CHARACTER OF THE VEGETATION.

417. *Objects of management.*— The objects of management of this working circle are to restore the ecology of the degraded reserved forests alongside the national highway from Acharapakkam to Madras and the barren and eroded reserved lands in Tiruttani taluk and Pallipat sub-taluk in Tiruvallur Range through reafforestation and thereafter meet the demands of the local population for fuel and small timber from the planted areas.

418. *General constitution.*— This working circle will, for fifteen years commencing from the advent of this plan, include Acharapakkam Reserved Forest in Madurantakam Range Hanumanthaputheri Paranur and Appur Reserved Forests in Chingleput Range and Karimbedu, Kollalakuppam, Paduthalam, Koramangalam, T.C. Kandigai North and South and Tadur Reserved Lands in Tiruvallur Range.

419. *Area.*— The total area of this working circle i.e., the extent of the annual regeneration areas of the first fifteen years is 18·00 sq.km. of which an extent of 12·04 sq.km. will be planted up during the period of this plan.

420. *Character of the vegetation.*— The type of forest met with over a greater portion of this working circle is referred to by Champion and Seth as tne Southern Euphorbia serub type and is described in paragraph 58. The type represents the ultimate stage in degradation.

SECTION 2.

DIVISON OF THE AREA.

421. *Division into planting series.*— The area covered by this working circle is divided into three planting series known as Konasamudram, Tiruttani and Chingleput. The area-wise details of each series are given in the sub-joined statement :

Serial number and name of the Planting series.	*Name of Range.*	*Area in hectares.*	*Name of the R.L. or R.F.*
(1)	(2)	(3)	(4)
1. Konasumudram	Tiruvallur	600·00	Karimbadu R.L. Gollalakuppam R.L. Paduthalam R.L.
2. Tiruttani	Tiruvallur	600·00	Koramangalam R.L. T.C. Kandigai (South) R.L. T.C. Kandigai (North) R.L. Tadur R.L.
3. Chingleput	Madurantakam Chingleput.	600·00	Acharapakkam R.F. Hanumathaputheri R.F. Paranur R.F. Appur R.F.

SECTION 3.

ANALYSIS AND VALUATION OF THE CROP.

422. *Stockmapping.*— The areas proposed for inclusion in this working circle have been carefully stockmapped ocularly and only such of those areas suitable for regeneration have been included. Pathches of rocky outcrops that were too small to mark in the stockmaps and hence included in the areas proposed for planting will perforce have to be excluded at the time of a planting. In Tiruttani and Pallipat sub taluk of Tiruvallur Range 23 out of the 30 blocks or reserved land were stockmapped and areas available for planting over a period of forty years at 40·00 ha. per annum in each of the two series was marked on the stockmaps. These stock maps have been filed in the Working Plan Office for future reference.

423. *Valuation of the crop.*—The areas included in this working circle do not contain any saleable growth.

SECTION 4.

METHOD OF TREATMENT.

424. *Silvicultural system.*—The silvicultural system prescribed is artificial regeneration with suitable drought resistant timber and fuel yielding species to supplement what little natural regeneration that may exist. As the regeneration areas are subject to adverse biotic factors including burning in the areas in Tiruvallur Range, very rigid protection against men and cattle will be necessary if the plantations are to succeed.

425. *Choice of species.*—The species prescribed for planting are Acacia planifrons, Acacia ferruginea, Albizzia amara, Pterocarpus santalinus, Pterocarpus marsupium and Hardwickia binata.

426. *Rotation.*—The planting prescribed under this working circle will be initiated with the introduction of this plan and consequently none of the plantations raised will come up for exploitation either during the period of this plan or the next. Hence the fixation of the rotation is left as an open question in this plan.

427. *Annual planting area.*—The annual planting area has been fixed at 40 hectares per annum on an average in each series based on silvicultural and administrative considerations.

SECTION 5.

TABULAR STATEMENT OF PLANTING.

428. The following statement gives details of areas to be planted annually in each of the planting series, the annual area being designated as a 'Coupe'. Where a non-compact coupe has been split into parts the constituent parts have been designated as 'Bits' and numbered serially.

TABULAR STATEMENT OF PLANTING.

Year of planting.	*Coupe No.*	*Name of planting series and extent of annual regeneration areas.*					
		Konasamudrams series.		*Tiruttani series.*		*Chinglepui series.*	
		Area in hec.	*Name of R.L.*	*Area in hec.*	*Name of R.L.*	*Area in hec.*	*Name of R.P.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1976	I	40·00	Karimbedus Bit I	10.90	Koramangalam.	40.00	Acharapakkam.
			Bit II	29.10	Do.		Do.
1977	II Bit I	25·00	Do.	44.00	Do.	40.00	Do.
	Bit II	14·00	Do.				
1978	III	40·00	Do. Bit I	22.50	Do.	40.00	Do.
			Bit II	17.50	Do.		
1979	IV	34·60	Do.	37.60	Do.	40 00	Do.
1980	V	45·40	Collala kuppam ..	39.30	Do.	40.00	Do.
1981	VI	45.00	Do.	40.00	Do.	40.00	Do.
1982	VII	46·20	Do. Bit 1	27.20	Do.	40.00	Hanumanthaputheri.
			Bit II	14.30	Do.		
1983	VIII	40·00	Do. Bit I	30.50	Koramangalam.	40.00	Do.
			Bit II	7.50	Do.		
1984	IX	40·00	Do. Bit I	20.20	T.C. Kandigai South	40.00	Paramur
			Bit II	8.80	T.C. Kandigai North		
1985 . ..	X	40·00	Do. Bit I	11.50	Tadur	40.00	Do.
			Bit II	32.95	Do.		
1986	XI Bit I	22·70	Do.	46.00	Do.	33.70	Do.
	Bit II	17·30	Do.		Bit I	22.40	Do.
1987	XII	40·00	Do.	42.30	Do. Bit II	27.30	Appur.

TABULAR STATEMENTOF PLANTING—*cont*.

Year of Planting.	*Coupe No.*	*Name of planting series and extent of annual regneration areas.*					
		Konasamudram series.		*Tirupathi series.*		*Chingleput series.*	
		Area in hec.	*Name of R.L.*	*Area in hec.*	*Name of R.L.*	*Area in hec.*	*Name of R.L.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1988	XIII Bit I	16.50	Do. Bit I	8.70	Do. Bit I	13.60	Hanumanthaputheri.
			Bit II	5·14	Do.		
	Bit II	16.90	Do. Bit III	3.16	Do. Bit II	32.00	Do.
1989	XIV	46.60	Do.	40.00	Do.	31.00	Do.
1990	XV	29.80	Paduthalam Bit I	15.00	Do.	40 00	Do.
			Bit II	23.45	Do.		

429. The annual coupes have been marked on the detailed management map of the working circle.

SECTION 6—REGULATION OF REGENERATION OPERATIONS.

430. *Survey and Demarcation of the annual coupes.*—Considering that the coupe is to be per manently demarcated vide paragraph 445—and is to be exploited when the plantation reaches maturity, the entire annual coupe will be laid out on the ground in accordance with its lay out in the detailed management map, and if for any reason the entire coupes is not planted during the year, the unplated pation will be planted up in the following year on the same principle that an unworked portion of a fuel coupe is worked in the following year so that redemareation at the time of exploitation and normalisation of the series at a later date does not arise. Further, a difference of one yeae in the age of the crop will not make any difference in its even.—agedness.

431. While surveying the coupe, shrub growth that may exist along its bouudary will be cleared to a width of 2 metres and small white washed cairns constructed at the salient points of the boundary pending final demarcation with stone slabs. Survey and demarcation will be completed by the end of April of the year of planting.

432. Soil conservation measures.—Elaborate soil conservation measures are not prescribed as a measure of economy. but gully plugging will be done wherever necessary starting from the top and proceeding downwards.

433. Espacement.—The espacement to be adopted will be 3 metres by 3 metres.

434. Aligning and marking.—Aligning and marking will be done immediately afier survey and demarcation and will commenences 5.49 metres (18 feet) away from the boundary.

435. Preparation of the planting site.—All growth other than that of valuable species found surviving within a radius of 75 cm from the regeneration patch will be prooted in order to minimise root competion and fire hazard while at the same time facilitaing increased percolation of rain water at the site of planting. If any useful tree species is found growing in or near the regenetraion patch uprootal of obnoxious growth will be confined to radius of 75 cm around such advance growth and the patch skipped for artificial planting. All stones found at the site should be arranged on the lower side of patch in the form of a crescent shaped bund to prevent any washout of the regeneration pacth. In plains portions clearance and uprootal of valueless growth, burning and ploughing may be done.

436. Pitting–Pitting will be done as the first South—West monsoon showers are received in June and completed by the end of the month. The size of the pits will be 40 centimetres cube.

437. Planting season.—The planting season will commence from June depending of the adequacy of rain for the purpose. It hardly needs emphasising that satisfactory results can be achieved only by planting early in the growing season which commences with the onset of the south west monsoon and it is a measure of the District Forest Officers competence to gear up the administrative machinery and sufficiently enthuse to achieve the ideal.

Section 7—Nursery.

438. The planting stock consisting of container plants will be raised in conveniently located nurseries. The various nursery operations will be so timed that one year old container plants 40 to 45 centimetres tall and with woody stems are got read by the time planting is due to commence. The container plants will be raised by pricking out from mother beds or direct dibling depending on whether the partoicular species can stand pricking out or not. The ploythene containers should be 25 cm.X 13 cm. and of 200 guage thickness. The soil used in the containers should be a red loam with an admixture of well rotted from yard manure in the proportin of 4:1. Attendant works such as fencing, watering on non-rainy days and weeding intial shading of pricked out seedings, shifting of container plants timely culling out of defective plants in the containers and their replacement, and spraying of pesticider should be provided for in the estimate. It will be necessary to raise at least 20 per cent more number of container plants for replacement of casualties.

439. Fresh and good quality seed in sufficient quantities well be obtained from the DCF (G), Coimbatore, sufficiently early by placing timely indents on him.

Section 8—Subsidiary Silicultural Operations.

440. Replacement of casunlities.—Replacement of casualties will be done and when they occur before the close of the planting seasons and during the second year. No beating up iscontem-plated during the third year.

441. *Weeding and soil-Working.*—First year—Will be done in October at the onset of the North-East monsoon to a radius of 0.60 cm. around the plants and to a depth of 15 cm. Soil Working will be done with pickaxes.

Second year.—Will be done to the same dimensions during June—July.

Third year—Will be done to the same dimensions but only around casualities replaced during the second year.

442. *Tending of natural regeneration.*—Tending of natural regeneration will be done wherever such regeneration exists.

443. *Cutting back of obnoxious growth.*—Cutting back of obnoxious growth will be done during the second year wherever found necessary.

444. *Thinning*—The question of thinning will arise when the cropattains a height of about 12.75 metres. Considering the poor status of the sites being planted up under this working circle it is most unlikely that the plantations will attain this height during the currency of this plan. Hence no thinning is prescribed.

SECTION 9—OTHER REGULATIONS.

445. *Demarcation of Plantations*·—The plantations raised will be demarcated permentely with stone slabs planted at their four salient corners and on which the calendar year of planting and area in hectares has been engraved. The inscriptions will be made on the outward facing of the slabs and painted with tar. The inscriptions will be atleast 8 cm. high and 1 cm. deep. Stones plated on coommon boundaries will have the number and year of planting of the adjacent coupe also engraved on it. Stones planted in the plains will be 1.05 m. long, 45 cm. wide and 15 cm. thick whereas those to be planted on slopes will be 70 cm. long 30 cm· wide and 10 cm. thick.

446. *Fencing.*—The regeneration area will be fenced wherever brushwood is available for the purpose.

447· *Fire protection.*—While fire is no problem in the Chingleput series it is major problem in the other two series where burning of grass by graziers has been traditional. It is suggested that protection from fire be ensured by securing the co-operation of the local villagers to the scheme of reafforestation and intensive partrolling by the protective staff during the fire season. If, however, this system should fail than a 5 metre wide fire line, inclusive of 1 metre wide guied lines on either side, will be traced all round the plantation except along the reserved land boundary where fire tracing will be done to a width of 5.49 metres (18 feet). Fire tracing will be completed by the end of February.

448. *Closure to grazing*·—All regenerated coupes will be closed to grazing for a period of six years including the year of regeneration. Further closure, if necessary, will be done after obtaining the concurrence of the territorial Conservator of Forests.

449. *Inspection paths.*—Easily graded inspection paths 1 metre wide will be laid out and maintained in all the plantations so as to facilitate transport of planting stock, easy access in the event of fire and inspection by officers. They should be so aligned that they link up with inspection paths in adjacent plantations.

SECTION 10—CONTROL.

450· The following control records will be maintained by the District Forest, Officer and posted annually:

(i) Record of works.

(ii) Register of deviations.

(iii) Control journal.

(iv) Nursery and Plantation journals.

(v) Control map.

The manner in which these records are to be maintained is furnished in paragraph 531 to 543.

CHAPTER VI—WORKING PLAN FOR THE MINOR FOREST PRODUCE WORKING CIRCLE.

SECTION 1—GENERAL CONSTITUTION OF THE WORKING CIRCLE.

451. *Objects of management*—The objects of management are to meet the demands of the local population for minor forest produce and to increase the potential of such produce in the forests.

452. *General constitution*—This working circle will cover all the forests under the control of the Forest Department in the division but it will not cover the plantations raised under the Farm Forestry Scheme as they are generally outside the limits of the forests and their management is governed by a separate set of rules.

SECTION 2—DIVISION OF THE AREA.

453. As in the previous working plan, in dividing the area into Farms, each Range will be considered as a Farm which will be the unit of sale and exploitation. There will thus be 5 Farms named after the Ranges as read in follows:—

LIST OF MINOR FOREST PRODUCE FARMS.

Serial number. (1)	*Name of farm.* (2)
1	Tiruvallur.
2	Tambaram.
3	Kelambakkam.
4	Chingleput.
5	Madurantakam.

SECTION 3—ANALYSIS AND VALUATION OF THE CROP.

454. Due to conversion of vast tracts of forest into man-made forests the natural minor forest produce potential of the division has dwindled. The main items of such produce are the usefructs of Palmyra climbers of various species for baske making and grass of different type for brooms and thatching. While admitting that yields and revenue from minor forest produce in the division have been low one cannot help observing that little is produced is removed unchecked by the villagers resulting in leakage of revenue. This is probably due to the practice of reditional free removals which developed when the forests were under Panchayat and Zamin control and the highly scattered nature of the relatively samll sized forest blocks which rendered working though contractual agency unremunerative. Besides it is only the very poor amongst the villagers who resort to the forests for collection of minor forest produce to make a living. The redeeming features of this abuse which entails some loss of revenue is that nothing is allowed of waste and that poor villagers find something to do eko out a living during the agricultural off-season where they are hard pressed for employment. The only solution to the problem lies in increasing the production of minor forest produce by raising and maintaining farms of the same and it is suggested to the District Forest Officer that he should select suitable areas and raise such farms in future. While on the subject of raising minor forest produce farms it is suggested that the cultivation of medicinal plants, a subject that has gained considerable promince of late may be taken up. The species suggested are Solanam species, Dioscorea species and Vinca rosea. The necessary expertise could be obtained from the Indian Institute of Horticulture Research, Bangalore. To start with pilot-scale farms may be raised. Irrigation, manuring and watering may be resorted to if warranted. Another useful suggestion that has been made in sevaral working plan is to raise Palmyra by direct dibbling along the boundaries of forest blocks and this could profitably be taken up in the Reserved Lands in Tiruvallur Range where the boundaries otherwise are in a nebulous state.

455. The minor forest produce occuring in the division are listed out below :—

Botanical name. (1)	*Tamil name.* (2)	*Trade name.* (3)	*Part that may be exploted.* (4)
Acacia arabica	Karuvelam	Babul	Gum and fruit.
Acacia caesia	Indu	....	Bark.
Acacia leucophloes	Velvelam	Panicled acacia	Fruit.
Andropogan species	....	Broomstick grass	Stalks.
Azadirachta indica	Veppam	Neem	Fruit.
Buchananialatifolia	Saraiparuppu	....	Fruit.
Borassusflabellifer	Panai	Palmyra palm	Fruit and leaves.
Carrisa congesta	Kilakkai	Common Bengal currant.	Fruit.
Cocos nucifera	Thennai	Coconut palm	Fruits and leaves.
Cymbopogan coloratus	Mandapullu	....	Stalks.
Emblica officinalis	Nelli	Emblic myrobolam	Fruit.
Ferronialimonia	Velam	Wood apple	Fruit.
Gynnema montanum	Megali	Swallow-wort	oot.
Mangifera indica	Mamaram	Mango	Fruit.
Phoenix sylvestris	Icham	Wild date palm	Fruit and leaves.
Pongamia pinnata	Pungam	Indian beach	Fruit.
Strychnos potarorum	Theethankottai	Clearingsnutree	Fruit.
Syzygium cumin	Naval	Indian cherry	Fruit.
Tamarindus indica	Fuli	Tamarind	Fruit
Zizyphus mauritiana	Elandai	Jujube	Fruit
....	Nochlikodi	....	Stem
....	Avinchilikodi	....	Stem
....	Irumbilikodi	....	Stem.
....	Melagu	Bees wax	Bees wax.
....	Then	Honey	Honey.
....	Maan Kombu	Dear horns	Horns
....	....	Remains of dead animals	Carcass

SECTION 4—METHOD OF TREATMENT

456. *Agency of exploitation.*—Honey, bees wax, deer horns and valuable remains of dead animals will be exploited departmentally whereas the other items will be exploited through contractual agency.

457. *Period of lease.*—The period of lease will be the fasli year i.e. from 1st July to 30th June.

458. *Auction sales.*—Auction sales of the farms will be held annually between the 15th of May and 15th of June.

SECTION 5—CONTROL.

459. The following control records will be maintained by the District Forest Officer and posted annually at the end of the fasli year :—

(i) Control book.

(ii) Control journal.

The manner in which these records are to be maintained furnished in paragraph to. ;

CHAPTER VII—WORKING PLAN FOR THE GRAZING WORKING CIRCLE.

SECTION I—GENERAL CONSTITUTION OF THE WORKING CIRCLE.

460. *Objects of management*—The objects of management of this working Circle are:

(i) To provide adequate pasture for cattle of village and towns in the neighbourhood of forests without prejudice to the objects of management of other working circles and basic principles of forest conservency.

(ii) To limit the grazing capacity to the carrying capacity of the forests.

(iii) To regulate grazing and incidentally to derive some revenue by levying of a norminal licence fee for the grazing of cattle.

(iv) To improve grazing facilities.

461. *General condition.*—This working circle will extend over the whole of this division with the exception of certain specified areas which will be closed to grazing mainly for silviculturaly reasons and occasionally for other reasons.

462. The areas closed to grazing will fall under the following categories, namely;

(i) Areas permanently closed to all grazing.

(ii) Areas closed for specified periods under the provisions of this plan.

(iii) Areas temporarily close to grazing under the provisions contained in the Madras Forest Manual as a punitive measure in cases of unauthorized and wanton on burning by the people of the locality.

463. *Permanent closure.*—The following areas will be closed to grazing permanently:

(i) Areas handed over to the State Silviculturist

(ii) Compounds of buildings located within forest limits.

464. *Closure for specific period.*—Closure to grazing for silvicultural reasons will be applied as follows:

(i) All felled coupes of the Fuel Working Circle of the previous plan will be closed for a period of six years inclusive of the year of felling.

(ii) All felled coupes of the Eucalyptus Plantation Working Circle will be closed for a period of two years inclusive of the year of felling but if blanks in them are replanted the closure will be for aperiod of six years inclusive of the year of felling provided the restocking is done during the year of felling.

All plantations will be closed for a period of six years inclusive of the year of plantings. The same will apply to Cashew plantations in which blanks are restocked.

465. *Temporary closure.*—The following areas will be closed to grazing temporarily:

(i) Divisional experimental plots till the results are finally recorded.

(ii) Fire burnt areas provided the area so closed at a time does not exceed 202.34 has in one particular locality and provided a report is submitted immediately to the Collector and the Chief Conservator of Forests. The closure should be applied within a fortnight of the fire so that the culprits cattle is deprived of the tender grass that comes up in such areas. Delayed closure will only defeat the object of such closure.

466. *Regulation of grazing.*—Grazing will be regulated by the issue of permis printed accordance with the provision of the Tamil Nadu Forests Manual. The permits issued will be valid from the date of issue to the end of the grazing year in which they are issued. The grazing year commences from the 1st of July and extends to the 30th June of the following year. According to the clarification issued in Chief Conservator of Forests reference R. Dis. 50794 of 1968 Dated 4th November 1968 a grazing permit issued in one division is valid for the whole state.

467. *Grazing fees.*—The grazing fees to be levied (For domestic animals) are furnished below. They were sanctioned in G.O.Ms. No. 17, Agriculture, dated 2nd January 1971 for the entire state and came into force from 1st July 1971.

Description of animals.	*Rete per head.*
(1)	(2)
	RS.
Sheep	0.50
Cows and Bulls	1.00
Horses and Asses	2.00
Buffalos	2.00
Elephants	20.00

A calf still drawing milk from its mother i.e., up to about 6 months old and accompanying its mother but not driven independently will be allowed to graze free. Calves admitted free at the beginning of the year as being under six months old may be allowed to graze free for the whole of the first half of the year, but should pay a half rate for the second half-year, while calves entering the second half of the year free as being under six months may be permitted to graze free for the whole of the second half. The graziers own estimate of the age of a calf may be accepted in all but obviously missstated cases.

468. Goats will on no account be licensed to browse or admitted into any of the reserves.

469. The grazing fees will be collected departmentally as per standard practice followed all over the State. The permits will be issued by the Range Officer and the concerned Foresters. Payment for permits must be made only to these officers either directly or by money order.

470. *Removal of monsoon grass.*—If there is demand for monsoon grass its removal will be regulated as per the orders of Government referred to in paragraph 131.

471. *Improvement to watering facilities.*—In a semi-arid tract like Chingleput Division the forest springs dry up during summer and the only sources of water supply with in forest limits then for watering cattle are the small water tanks constructed in the past for storing rain water for the purpose. It is found the while it behaves the department to plough back a part of the grazing revenue on maintaining these tanks in a desilted condition and proper state or repair no work of the type has been done in probably the last few decades and prescriptions to this effect in successive Working Plans have remained only on paper with the territorial staff paying lip sympathy to the cause. It is, therefore, postulated that the undermentioned tanks will be taken up for desilting and such repairs as are found necessary during the period of this plan. Only one maintenance is prescribed during the working plan period on the assumption that once the repairs are carried out by the department the villages will do the annual maintenance there after on their own at least for the following nine years. A time-bound programme for the work is furnished in the subjoined statement—

STATEMENT SHOWING PROGRAMME FOR MAINTENANCE OF TANS FOR WATERING CATTLE.

Year of maintenance.	*Name of Range.*	*Location of tank*
(1)	(2)	(3)
1977-78	Chingleput	Hanumanthaputheri Reserved Forest near cairn No.28
	Tambaram	Nallur Reserved Forest.
1978-79	Kelambakkam	Anjur Reserved Forest.
1979-80	.. ..	Illalur Reserved Forest.
1980-81	Chingleput	Solur Reserved Forest near cairn No. 3.
1981-82	Tambaram	Vadakkupattu Reserved Forest.
	.... ..	Orgadam Reserved Forest near cairns No. 15 and 16
1982-83	Chingleput	Thirukalikundram Reserved Forest near cairns No. 44 to 44
1983-84	Chingleput	Appur Reserved Forest.
1984-85	Madurantakam	Nemeli Reserved Forest
1985-86	Chingleput	Kattankulathur Reserved Forest near cairn No. 49

SECTION 2—OTHER REGULATIONS.

472. *Grazing notification.*—A notification regarding grazing will be published in the District Gazette every year in the month of May specifying the areas closed to grazing and the condition regulating grazing in the different parts of the division.

473. *Demarcation of closed areas.*—All areas closed to grazing will be indicated on the ground by means of red sign-boards written in Tamil at as many salient points as may be necessary.

SECTION 3—CONTROL.

474. The following control forms and maps will be maintained by the District Forest Officer in the manner prescribed in paragraphs to and should be posted at the close of each grazing year —

(i) Control book
(ii) Control journal.
(iii) Control maps.

475. The control maps should be prepared annually at the District Forest Officer separately for each Range and should clearly show the areas (i) permanently closed and (ii) temporarily closed to grazing.

CHAPTER VIII—MISCELLANEOUS REGULATIONS.

476. There are some subjects of minor importance for the management of which the formation of separate working circles is not warranted. These subjects through minor have a bearing on the efficient management of the forest estste. The prescriptions in respect of them are detailed in this chapter.

SECTION 1—MAINTENANCE OF BOUNDARIES.

477. *General.*—The maintenance of boundries is closely connected with the prevention of forest offences as without it is hardly fair to punish people for trespass and mischief when they have no means of knowing whether they are inside a reserved forest or not . For Preventing encroachment and for the general protection of the estate, the boundaries should not only be easy to ascertain but should also be maintained in good condition.The specifications to which the boundaries are to be maintained and the manner in which the work is to be carried out has been laid down in the Range Administration Manual and it will be the duty of the District Forest Officer to see that these instructions are strictly followed.

478. *Rectification of defects.*—Certain defects pertaining to fallen and missing cairns were listed out and prescribed to be recrified in the previous working plan. A past of the work, alluded to in para 248, was carried out leaving a part undone. Details of the pending work are listed out below. They will be executed during the period of this plan.

STATEMENT SHOWING BOUNDARY DEFECTS TO BE RECTIFIED.

Serial number.	*Name of Reserved Forests.*	*Number of cairns to be replanted.*	
		Fallen.	*Missing.*
(1)	(2)	(3)	(4)
	1 *Tiruvallur.*		
1	Irugulam	2	2
2	Erumaivettipalayam	3	3
3	Vembedu	4	2
	2. *Tambaram.*		
1	Naganiam	3	..
2	Nallur	4	4
3	Vattambakkam	3	..
4	Maduraibpakkam	3	3
5	Pulikuradu	4	3
6	Tambaram	3	3
7	Vandalur	5	10
8	Unamanjeri	3	4
9	Nanmangalam	3	..
10	Kumili	4	5
11	Gudalur	5	4
	3. *Kelambakkam.*		
1	Sengundram	7	3
2	Tirutheri	..	2
3	Vallam	..	92
4	Anjur	5	59
5	Sirukundram	8	12
6	Thaiyur	..	7
7	Mambakkam	..	

Serial number.	Name of Reserved Forests.	Number of cairns to be replanted.	
		Fallen.	Missing.
(1)	(2)	(3)	(4)
	4. *Chingleput.*		
1	Kavanipakkam	1	..
2	Edamachi	3	..
3	Appur	2	..
4	Paranur	2	..
3	Hanumanthaputheri	2	..
	5. *Madurantakam.*		
1	Nemmeli	..	38
2	Oragdam	3	15
3	Navalur	2	..
4	Kattur	10	
5	Illalur	1	..
6	Madayathur	3	..
7	Koliyalam	..	4

SECTION 2—MAINTENANCE OF INTER-STATE BOUNDARY.

479. A part of the inter state boundary between Tami Nadu and Andhra Pradesh passes along Pulikundram R.L. and Allikuli R.F. of Tiruvallur Range. The length of the boundary is about 8·50 kilometres and its width 6·10 metres (20 feet). This boundary which came into being in April 1960 as a result of the Pataskar award was cleared for the first time and demarcated in the year 1969-70 The cairns used in the demarcation consist of loosely heaped boulders and are not as per specifications laid down in the Tami Nadu Forest Manual. This defect will have to be rectified.

480. While the Board of Revenue, Madras has laid down the procedure to be followed in maintaining such boundaries in its proceedings Misc. No. 230, dated 16th March 1953 it does not seem to have fixed an interval at which such work should be carried out. Hence, the work will be done whenever found necessary and considering that the procedure to be followed is time consuming it is suggested that it be taken up once in five year. According to the procedure prescribed in the aforesaid proceedings of the Board of Revenue the boundary has first to be jointly inspected by representatives of the two states and an estimate with a sketch for the work prepared. The estimate is then to be submitted to the Government of Tamil Nadu for sanction and after the work is executed by the Forest Department of this state half its cost is to be recovered from Andhra Pradesh. The width to which the line is to be cleared is 20 feet i.e. 10 feet in either State, and besides, fallen cairns are to be repaired. The District Forest Office will thus note that action be reclear the boundary will have to be initiated by him and considering the time consuming procedure to be followed to get the work sanctioned it is necessary to initiate action well over a year in advance. As of now the line is in need of clearance.

SECTION 3—BUILDINGS.

481. *Construction of new buildings.*—Due to pressure of an increasing population on the limited housing available and the high cost of building construction Government servants who are comparatively low paid find it difficult to secure accommodation consistent with their work and status at rents they can afford. The Government being aware of this difficulty have been following a policy of making funds available under Five Year Plan scheme for constructing quarters for the lower level executive staff and as an outcome of this policy several quarters have been constructed. Even so, a lot yet remains to be accompalished. A list of subordinates who are yet to be provided with quarters is furnished below and it is hoped that the District forest Officer will press for higher allotments than hither to for new buildings and see that quarters for all these subordinates are constructed during the prriod of this working plan Whenver quarters are constructed steps should be taken to see that they are electrified wherever possible and that arrangements for supply of potable water are made. Where land has to be acquired for building action to acquire the same should be taken sufficiently well in advance of construction.

LIST OF EXECUTIVE SUBORDINATES YET TO BE PROVIDED WITH GOVERNMENT QUARTERS.

Serial, number.	*Name of Range.*	*Designation of Subordinates.*
(1)	(2)	(3)
1	Tiruvallur	Range Officer, Tiruvallur.
2		Forester, Vengal Section.
3		Forester, Uthukottai Section.
4		Forester, Palavakkam Section.
5	Tiruvallur	Forest Guard and Watcher Panchal Beat. I
6		Do. Irugulam Beat.
7		Forest Guard and Watcher Allikuli Beat.
8		Do. Vengal Beat.
9		Do. Palavakkam Beat.
10		Do. Erumaivettipalayam Beat.
11		Do. Nemalur Beat.
12		Do. Pullur Beat.
1	Tambaram	Forester, Sriperumbudur Section.
2		Forester, Gudalur Section.
3		Forest Guard and Watcher Maduraipakkam Beat
4		Do. Gudalur Beat.
5		Do, Kumili Beat
6		Do. Mannur Beat.
7		Do. Nallur Beat.
1	Kelambakkam	Range Officer, Kelambakkam.
2		Forester, Singaperumalkoil Section.
3		Forester, Thaiyur Section.
4		Forest Guard and Watcher Thaiyur Beat.
5		Do. Illalur Beat.
6		Do. Alathur Beat.
1	Chingleput	Forester, Marudam Section.
2		Forest Guard and Watcher Appur Beat.
3		Do. Singaperumalkoil Beat
4		Do. Tiruthori Beat.

Serial number.	Name of Ranke.	Desi3nation of Subordinates.
(1)	(2)	(3)
1	Madurantakam	Range Officer, Madurantakam.
2	Do.	Forester, Kattur Section.
3	Do.	Forester, Madurantakam Section.
4	Do.	Forester, Oragadam Section.
5	Do.	Forest Guard and Watcher, Kattugudalur Beat.
6	Do.	Forest Guard and Watcher, Kattankolathur Beat.
7	Do.	Forest Guard and Watcher, Koliyalam Beat.
8	Do.	Forest Guard and Watcher, Edamachi Beat.
9	Do.	Forest Guard and Watcher, Marudam Beat.
10	Do.	Forest Guard and Watcher, Maiyur Beat.
11	Do.	Forest Guard and Watcher, Oragadam Beat.
12	Do.	Forest Guard and Watcher, Nemmeli Beat.

482. No provision has been made in the above proposals for construction of quarters for subordinates on special duty. The District Forest Officer will provide for construction of quarters for them if and when their posts are made permanent.

483. *Maintenance of existing buildings.*—The maitenance of existing buildings in the division cannot be said to be satisfactory with the result that some of the buildings remain unoccupied. The District Forest Officer will spare no effort to see that all the quarters are property maintained and provided with all the essential facilities as in Housing Board Colonies wherever practicable. He will also see that all the compounds are provided with live hedges and planted up with useful trees.

484. *Water supply.*—Where water supply to buildings is from wells sunk by this department the wells should be cleaned annually and properly maintained.

SECTION 4—MANAGEMENT OF STONE QUARRIES.

485. There is a number of stone quarries in the division worked by contractual agency for supply of granite to the construction industry in and around Madras City. They are located mainly in Tiruvallur and Tambaram Ranges. In the previous working plan the management of these quarries was dealt with in the Minor Forest Produce Working Circle but as a quarry does not fall under the definition of a 'Forest Crop' it was felt that the subject should rightfully be dealt with in the chapter on Miscellaneous Regulations.

486. The management of stone quarries will be governed by the Minor Mineral Concession Rules; and as per the amendment issued in G.O. No. 3014, Agriculture Department, dated 3rd October 1969 to the rules framed under section 763 (*a*) of the Tamil Nadu Forest Act 1882 to regulate quarrying of minor minerals and mining major minerals in Reserved Forests in the Madras Forest Manual, Volume-1 the power to confirm auction sales for quarrying minor minerals is as follows :—

Where the sale value does not exceed Rs. 500·00.	District Forest Officer.
Where the sale value exceeds Rs. 500·00 but not Rs. 2,500·00.	Conservator of Forests.
Other cases	Chief Conservator of Forests.

487. *Agency of exploitation.*—The agency of exploitation will be contractual.

488. *Unit of sale.*—The quarry will be the unit of sale ; but if there is demand from the bidders for clubbing two or more units and selling them as such the District Forest Officer may, in his discretion, aceede to the demand.

489. *Lease period.*—The lease period will be two years commencing from 1st July. The fact that a lease consists of more than one unit or a lessee has taken more than one lease shall not entitle the lessee to the grant of a longer lease period.

490. The lease period of two years was fixed by Government in its memo No. 78611/DV/71-8, Agriculture Department dated 20—11—1972 and the fact reiterated in its memo No. 51757/FR VII/74-5, Forests and Fisheries Department, dated 5th July 1975.

491. As quarrying results in a permanent loss of forests and irreparable damage to the landscape and ecology no new quarry will be opened without the specific orders of the Chief Conservator of Forests.

492. As on 30th September 1976 there are 139 quarries in the division ; the Range-wise break up being :

Tiruvallur	..	33
Tambaram	..	100
Chingleput	..	1
Madurantakam	..	5

A detailed list of the quarries containing all the relevant details including the current lease period is furnished in the subjoined statement :

STATEMENT SHOWING THE DETAILS OF STONE QUARRIES AND THE STAGE OF LEASES AS ON 30TH SEPTEMBER 1976.

Name of range.	*Name of quarry.*	*Quarry number*	*Extent in hectares*	*Current lease period.*		*Remarks*
				From	*To*	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Tiruvallur	Pettaikandigai	1	0·77	27th September 1975	30th June 1977	....
	Podathupettai	1	1·73	1st July 1975	Do.	....
	Konasamudram	1	1·39	16th July 1975	Do.	....
	Konasamudram	2	0·91	17th September 1975	Do.	....
	Kollalakuppam	1	0·38	..	..	Sale dropped for the years 1975-76 and 1976-77.
	Pandaravedu	1	1·57	27th September 1975	30th June 1977	....
	Karimbedu	1	0·40	15th July 1975	Do	....
	Do.	2	2·46	25th September 1975	Do	....
	Do.	3	0·49	25th September 1975	Do	....
	Do.	4	0·43	..	..	Sale dropped for the year 1975-77.
	Vediankadu	1	0·96	..	..	Do.
	Venganur	1	..	..	..	Do.
	Tiruttani	1	0·54	1st September 1975	30th June 1977	....
	Do.	2	0·50	Do.	Do.	....
	Do.	3	0·56	Do.	Do.	....
	Maddur	1	1·62	..	..	Sale dropped for the year 1975–77.
	Karthikeyapuram	1	1·03	1st September 1975	30th June 1977	....
	Do.	2	0·33	Do.	Do.	....
	Do.	3	0·55	Do.	Do.	....
	Do.	4	0·32	Do.	Do.	....
	Do.	5	0·35	Do.	Do.	....
	Do,	[illegible]	1·18	Do.	Do.	....

STATEMENT SHOWING THE DETAILS OF STONE QUARRIES AND THE STAGE OF LEASES AS ON 30TH SEPTEMBER 1975.

Name of range. (1)	*Name of quarry.* (2)	*Quarry number.* (3)	*Extent in hectares* (4)	*Current lease period.* *From* (5)	*To* (6)	*Remarks.* (7)
	Do.	7	1·22	1st September 1975	30th June 1977.	....
	Do.	8	1·20	Do.	Do.	....
	Do.	9	0·54	Do.	Do.	....
	Do.	10	0·47	Do.	Do.	....
	Do.	11	1·85	..	..	**Sale dropped for the years 1975-77.**
	Do.	12	1·70	..	..	Do.
	Do.	13	2·65	..	..	Do.
	Do.	14	1·22	..	..	Do.
	Do.	15	2·30	..	..	Do.
	Do.	16	0·40	..	..	Do.
	Do.	17	0·82	..	..	Do.
Pamdaram Nanmangalam	Do.	1	2·90	Do.	..	Do.
	Do.	2	4·80	..	..	Do.
	Do.	3	2·40	..	..	Do.
	Do.	4	0·40	..	..	Do.
	Do.	5	1·20	..	..	Do.
	Unamanjeri	1	0·63	9th August 1975	30th June 1977	....
	Do.	2	0·49	1st July 1975	Do.	....
	Do.	3	0·69	1st July 1975	Do.	....
	Do.	4	0·40	Do.	Do.	....
	Do.	5	·38	..	..	**Sale dropped for the years 1975-77.**
	Do.	6	0·51	6 th August 1975	30th June 1977	....
	Do.	7	0.47	21st February1975	30th June 1977	
	Do.	8	0.24	9th August 1975	Do.	

..	Do.	9	0.61	9th August 1975 .	Do.	..
..	Do.	10	0.79	Do.	Do.	
..	Do.	11	0.81	1st July 1975 . ..	Do.	..
.	Do.	12	0.59	Do.	Do.	....
	Do.	13	0.73	9th August 1975 ..	Do.	....
	Do.	14	0·57	6th August 1975 ..	Do.	...
	Do.	15	0.61	. .	. .	Sale dropped for the years 1975–77.
	Do.	16	0.61	9th October 1975 .	30th June 1977 .	....
	Do.	17	1.78	1st July 1975	Do.	....
	Do.	18	2.39	9th August 1975 ..	Do.	....
	Do.	19	Sketch not available.		....	Sale dropped for the years 1975–77.
	Do.	20	0.40	1st July 1975	30th June 1977 ..	....
	Tambaram	1	1·08	....	....	Sale dropped for the year 1976–77 ar 1977–78.
	Do.	2	0.88	1st June 1976 ..	31st May 1978 ..	....
	Do.	3	0.73	4th June 1976 ..	Do.	...
	Do.	4	0·83	17th June 1976 ..	Do.	....
	DS.	5	1·44	Do.	Do.	....
	Lo.	6	1.71	16th June 1976 ..	Do.	....
	DS.	7	1'40	Do.	Do.	....
	Do.	8	0.50	15th June 1976 ..	Do.	....
	Do.	9	0.50	Do.	Do.	....
	Do.	10	0.60	....	....	Sale dropped for the year 1976a78.
	Do.	11	0.55	7th September 1976 ..	31st May 1978 ..	....
	Do.	12	0.66	15th June 1976 ..	Do.	....
	Do.	13	1.18	....	....	Sale dropped for the years 1976–78

STATEMENT SHOWING THE DETAILS QUARRIES AND THE STAGE OF LEASES AS ON 30TH SEPTEMBER 1976—*Cont.*

Name of range.	*Name of quarry.*	*Quarry number.*	*Extent in hectares.*	*Current lease period.*		*Remarks.*
				From.	*To.*	
(1)	(2)	(ε)	(4)	(5)	(6)	(7)
	Do.	14	1.25	....	....	Do.
	Do.	15	2·50	...	....	Do.
	Do.	16	0.93	17th June 1976	31st May 1978	....
	Do.	17	0.50	....	....	Sale dropped for the years 1976–78.
	Do.	18	0.72	26th July 1976	31st May 1978	....
	Do.	19	0.80	Do.	Do.	....
	Do.	20	0.90	....	....	Sale dropped for the years 1976–78.
	Do.	21	0.70	16th July 1976	31st May 1978	....
	Do.	22	1.42	17th July 1976	Do.	....
	Do	23	0.74	30th June 1975	Do.	....
	Do.	24	1.57	15th June 1976	Do.	....
	Do.	27	s0.58	17th July 1976	Do.	....
	Do.	28	0.52	15th June 1976	Do.	....
	Do.	29	1.02	18th June 1976	Do.	....
	Do.	30	1.20	....	....	Sale dropped for the years 1976–78.
	Do.	31	0.92	15th June 1976	31st May 1978	....
	Do.	32	1.10	Do.	Do.	....
	Do.	33	0·73	....	....	Sale dropped for the years 1976–78.
	Do.	34	0.99	15th June 1976	31st May 1978	....
	Do.	36	0.96	Do.	Do.	....
	Do.	37	1.52	17th June 1976	Do.	....
	Do.	39	0.67	15th Juane 1976	Do.	....
	Do.	40	0.32	Do.	Do.	....

	Do.	41	0.86	30th June 1976	Do.	..
Tambaram ..	.. Pulikaradu	1	0·94	26th August 1976 ..	37st May 1978 ..	..
	Do.	2	0·61	6th July 1976 ..	Do.	..
	Do.	3	0·92	Do	Do.	..
	Do.	4	0·44	17th June 1976 ..	Do.	..
	Do.	5	0·40	8th July 1976 ..	Do.	..
	Do.	6	0·99	....	....	Sale dropped for the years 1976-78.
	Do.	7	1·12	21st August 1976 ..	31st May 1978 ..	..
	Do.	8	0·66	18th June 1976	Do.	..
	Do.	9	0·87	15th June 1976 ..	Do.	..
	Do.	10	0·82	22nd June 1976 ..	Do.	..
	Do.	11	0·23	24th June 1976 ..	Do.	..
	Do.	12	0·51	..	..	Sale dropped for the years 1976-78.
	Do.	13	0·37	23rd June 1976 ..	31st May 1978 ..	..
	Do.	14	0·67	Do.	Do.	..
	Do,	15	0·49	1st July 1976 ..	Do.	..
	Do.	16	0·45	..	....	Sale dropped for rhe years 1976-78.
	Do.	17	0·53	28th June 1976 ..	31st May 1978 ..	..
Tambaram cont.—	Pulikaradu.	18	2.19	26th August 1976	31st May 1978.	....
	Do.	19	1·49	2nd July 1976 ..	Do.	..
	Do.	20	0·72	....	....	Sale dropped for the years 1976-78.
	Do.	21	0·77	15th June 1976 ..	31st May 1978 ..	..
	Do.	22	0.94	8th July 1976 ..	Do.	..
	Do.	23	1·06	15th June 1976 ..	Do.	..
	Do.	24	1·55	Do.	Do.	..
	Do.	25	0·74	....	....	Sale droped for the years 1976-78.

STATEMENT SHOWING THE DETAILS QUARRIES AND THE STAGE OF LEASE AS ON 30TH SEPTEMBER 1976—*cont.*

Name of Range.	*Name of quarry.*	*Quarry number.*	*Extent in hectares.*	*Current lease Period.*		*Remarks.*
				From.	*To.*	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Do.	26	1·32	16th July 1976	31st May 1978	....
	Do.	27	1·43	..	....	**Sale dropped for the years 1976-78**
	Do.	28	0·70	....	....	Do.
	Do.	29	0·70	17th June 1976	31st May 1978	....
	Do.	30	0·42	....	....	Saledropped for the years 1976-78.
	Do.	31	0·86	....	....	Sale dropped for the years 1976-78.
	Do,	32	1·14	20th August 1973	31st May 1978.	....
	Do.	33	1·12	7th July 1976	Do.	....
	Do.	34	0·60	....	..	Sale dropped for the years 1976-78.
Chingleput I	Appur)	1	1·71	....	....	Sale dropped for the years 1975-77.
Madurantakam	Oragadam	1	4·43	....	....	Do.
	Do.	2	16·75	....	....	Do.
	Do.	3	10·12	....	....	Do.
	Do.	4	**10·12**	....	....	Do.
	Navalur	1	[illegible]	....	....	**Do.**

SECTION 5—MAINTENANCE OF MISCELLANEOUS SPECIES PLANTATIONS.

493. There are some Teak, Tamarinda Casurina and miscellaneous species plantations in the division raised between 1950 and 1975. Many of them were failure but a few of them are partially successful. A list of the partially successful plantations is furnished below. Since their management does not come under the purview of any of the working circles it is dealt with under Miscelaneous Regulations.

494. While special prescriptions are made for Teak and Casuarina plantations the following general prescriptions will apply to all the plantations.

(i) The plantations will be closed to grazing for such period as the District Forest Officer in his discretion may decide is necessary on silvicultural grounds.

(ii) The boundary lines of the plantations shall be kept clear of all growth to a width of 2 metres.

(iii) The plantations will be kept clear of climbers.

(iv) The plantations will be effectively protected form theft and fire.

(v) Necessary cultural operations will be carried out with the concurrence of the Conservator of Forests.

495. *Teak plantation*.—There are 6 plantations of a total extent of 20·04 hectares raised between 1955 and 1959. The cultural operation prescribed to be carried out in them is thinning. Thinning will be done on the basis of the thumb-rule that the resulting espacement should not exceed one-third of the height.

496. The plantations are patchy and slow grown, and characteristic of dry Teak grown on low quality sites. At best they can be expected to produce poles of a sort, the rotation for which is normally 40 years and which will be tentatively followed in the absence of any data on the rate of growth for the species in the division.

497. *Casuarina plantations*.—There are 18 plantations of a total extent of 204·60 hectares. Besides climber cutting prescribed in paragraph. 494 the stems will be pruned from the fourth year onwards as a cultural and economic measure. The work will be done through contractual agency. The right to cut and remove the pruned material will be sold in public auction early in July with a lease period of three months commencing from the 1st of August. The following rules will, *inter alia*, be observed :

(i) Pruning shall be done to a height of 2·5 metres from ground level in the case of stems of and above 5 metres in height and should not exceed half the height of the stems. Plants below 2 metres in height will not be pruned.

(ii) Pruning shall be done only with sharp implements. The resulting stub should no exceed 3 cm. and no injury should be caused to the bark of the stem.

(iii) The coupe shall be worked methodically, the work starting at the farthest end and proceeding towards the nearest.

(iv) A Forester or Forest Guard will always be present when work is in progress.

(v) Removals will be under the cover of Form I permits.

(vi) The contractor will be responsible for any theft or damage within the leased area and a 200 metre wide belt around it.

498. Casuarina being a fuel crop the rotation will be the one maximum volume production, i.e, the year in which the mean annual increment culminates. Data for determining the rotation could not be collected for want of a complete series of age-graded plantations. It is suggested that the District Forest Officer lay out sample plots in different localities, record increment data annually and determine the rotation.

499. A list of the miscellaneous plantations to which the above prescriptions pertain is furnished in the subjoined statement.

LIST OF MISCELLANEOUS PLANTATIONS.

Serial number. (1)	*Name of Range.* (2)	*Year and Name of Plantation.* (3)	*Area in hectares.* (4)	*Espacement in metres.* (5)	**Remarks.** (6)
		I. TEAK.			
1	Madurantakam	1955 Maiyur	0.40	2.59x2.59	..
2	Do.	1956 Maiyur	0.80	2.59x2.59	..
3	Chingleput	1958 Hanumanthaputheri	4·69	3.66x3.66	..
4	Do.	1958 Paranur	6.07	3.66x3.66	..
5	Do.	1959 Paranur	4.04	3.66x3.66.	..
6	Madurantakam	1959 Kattur	4.04	3.66x3.66	..
		II. TAMARIND.			
1	Kelambakkam	1972 Anjur	1.90	3.00x3.00	..
2	Do.	1972 Sirukundram	2.20	3.00x3.00	..
3	Madurantakam	1974 Navalur	2.00	3.00x3.00	..
		III. CASUARINA.			
1	Tiruvallur	1972 Irugulam	8.00	1.00x1.00	..
2	Tambaram	1972 Mannur	8.90	1.00x1.00	..
3	Kelambakkam	1972 Kolathur	2.00	1.00x1.00	..
4	Chingleput	1972 Kattankolathur	3.00	1.00x1.00	..
5	Do.	1972 Tirukalikundram	4.00	1.00x1.00	..
6	Do.	1972 Salur	10.90	1.00x1.00	..
7	Madutantakam	1972 Gudalur 'B'	8.00	1.00x1.00	..
8	Tiruvallur	1973 Vengal	6.90	1·00x1.00	..
9	Tambatam	1973 Mannur	10.00	1.00x1.00	..
10	Kelambakkam	1973 Sengundram	8.00	1.00x1.00	..
11	Kelambakkam	1973 Kolathur	19.10	1.00x1.00	..
12	Madurantakam	1973 Gudalur 'B'	9.60	1.00x1.00	..
13	Tambaram	1974 Mannur	50.00	1.00x1.00	..
14	Kelambakkam	1974 Sengundram	7.10	1.00x1.00	..
15	Chingleput	1974 Paranur	2.80	1.00x1.00	..
16	Chingleput	1974 Appur	3.20	1.00x1.00	..
17	Tambaram	1975 Mannur	32.00	1.00x1.00	..
18	Kelambakkam	1975 Kolathur	21.10	1.00x1.00	..
		IV. MISCELLANEOUS			
1	Tiruvallur	1964 Pulikundram	138.40	2.59x2.59 5.03x5.03	..
2	Madurantakam	1964 Gudalur 'B'	17.41	6.70x3.35	..
3	Tiruvallur	1965 Pulikundram	8.09	2.59x2.59 5.03x5.03	..
4	Madurantakam	1970 Nemmeli	28.00	3.00x3.00	..
5	Madurantakam	1970 Rajapalayam	28.00	3.00x3.00	..
6	Madurantakam	1970 Oragadam	36.66	3.00x3.00	..
7	Chingleput	1971 Appur	32.00	3.00x3.00	..

Serial Number. (1)	*Name of Range.* (2)	*Year and Name of Plantation.* (3)	*Area in hectares.* (4)	*Espacement in meetres.* (5)	*Remarks.* (6)
8	Madurantakam ..	.. 1971 Rajapalayam	31.35	3.00x3.00	..
9	Madurantakam ..	.. 1971 Navalur	6.00	3.00x3.00	..
10	Tambaram ..	.. 1973 Tambaram	2.00	3.00x3.00	..
11	Kelambakkam ..	.. 1973 Kolathur	10.00	3.00x3.00	...
12	Chingleput ..	.. 1973 Paranur	4.60	3.00x3.00	..
13	Tiruvallur ..	.. 1975 Vembedu	2.00	3.00x3.00	..
14	Madurantakam ..	.. 1975 Acharapakkam ..	1.00	3.00x3.00	..

SECTION 6—CONSTITUTION AND MAINTENANCE OF NATURE RESERVES.

500. During the Forest Officers conference held in 1970 it was resolved that representative ereas of natural forest types in the state should be preserved for scientific and sacthetic purposes fspecially in view of the fact that natural forests were rapidly being converted in to man-made aorests. Additionally, the Prime Minister in her message [illegible] inauguration of project Tiger observe "The narrow outlook of the accountant must give way to a widder vision to the recreational educational and ecological value of undisturbed area of willderness. Is it beyomd our polea will and administrative ingenuity to set aside about one to two per cent of our forests in th pristine glory for this purpose Consequently, the Chief Conservator of Forests selected certain areas of natural forests throuhgout the state and ordered them to be maintained as Nature Reserves in his reference R. Dis. 19032I73-K4, dated 13th March, 1975.

The following areas were selected in Chingleput Division.—

Name of R. F. (1)	Extent in hectares. (2)
Allikuli R.F.	40.00
Nayapakkam R.F.	20.00
Guindy Park R.F.	345.19 including Raj Bhavan area of 105.22 ha

The last named reserved forest is now under the control of the wild Life Warden, Madras.

501. The prescription laid down by the Chief Conservator of Forests for the management of the Nature Reserves are as follows :

Forest both reserve will be demarcated with suitable stone pillars except where the Reserved Forest boundary itself forms the boundary of the reserve.

(ii) A journal will be maintained for each reserve giving the following details.
- (*a*) Surveyed sketch with extent and location sketch.
- (*b*) Annual rainfall data.
- (*c*) Maximum and minimum temperature details.
- (*d*) Altitude.
- (*d*) Altitude.
- (*e*) Soil and mosture conditions an rainage.
- omposition of the fiora.
- (*g*) Details of the fauna.
- (*h*) Other etails an features of interest.

It was also prescripe that the journal will be maintaine in the District Forest Cffice and copis of the journal will be sent to the Conservator of Foresrs, State Silvicultyrist and Chief Conservato of Forests for record.

502. The first two Nature Reserves, which were secdacted by the District Forest Officer have been marked on the detailed management maps.

SECTION 7—PRESEERVATION OF PLANTATIONS AND NATURAL FORESTS IN MUNICIHAL TOWNS.

503. It has been ordered by the Chief Conservator of Forests, Madras, in his reference No. 53795/76, C4, dated 5th July, 1976, that plantations and natural forests occurring within the limit of municipal towns should not be felled with a view to enhancing the landscape of such towns. There are a few such plantations in this division located in Chinglepur and Tambaram and while they will be thinned in order to maintain them in healthy condition they will not be-felled without the specific orders of the Chief Condervator of Forests. Except for the Eucalypt plantationseh other plantations have been included in their reserpective Working Circle so that they receive prescribed cultural treatment, The 1963 Tambaram Eucalypt plantation is with the State Slviculturist at present and the District Forest Officer need not tend it until such time as it is retransferred to the division.

A list of the plantations to which these prescriptions apply duly arranged Municipalitywise its tabulated belowi:-

Name of Municipality.	Name of Range.	Name and year of Plantation.	Area in hectares.	Species.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)
Chingleput	Chingleput	Hanumanthaputheri 1957.	4.69	Teak	..
	Do.	Hanumanthaputheri 1962.	2.02	Eucalypt	..
	Do.	Hanumanthaputheri 1963.	4.05	Do.	..
	Do.	Hanumanthaputheri 1964.	2.22	Do.	..
	Do.	Hanumanthaputheri 1972.	8.50	Do.	..
	Do.	Thirumani, 1967	11.27	Do.	..
	Do.	Thirumani 1971	16.00	Cashew	...
	Do.	Thirumani 1974	14.20	Do.	..
Tambaram	Tambaram	Tambaram 1963	6.88	Eucalypt	Under the control of the State Silviculturist.
	Do.	Tambaram 1973	2.00	Miscellaneous	..
	Do.	Pulikuradu 1972	18.20	Eucalypt	..

SECTION 8—SUGGESTIONS REGARDING JURIDICTIONAL CHANGES.

504. Certain jurisdictional changes and appointment of additional satff is found necessary in view of the additional regeneration load cast by the prescriptions of the Red Sanders Plantation and Afforestation Working Circles in Tiruvallur Range, and the scattered nature of the Forest Blocks and consequently of the work spots in this Range.

505. *Forest Guards.*— At present there is one Forest Guard at Pallipet. Under the Afforestation Working Circle work is to be taken up near Tiruttani (Tiruttni Series) and Pallipat (Konasamudram Series). While the latter series can be locked after by the Forest Guard at Pallipat a separate Forest Guard will be required to look after the work in the former series. Hence the appointment of one Forest Guard for the Tiruttani series is suggested.

506. *Reserve Watchers.*— Protection in the Tiruttani and Konasamudram series referred to above from men, fire and cattle including goats is a major problem to tackle for which the Forest Guards must be given the assistance of Reserve Watchers. There is no Reserve Watcher attached to the Forest Guard at Pallipat at present. Hence it is suggested that the appointment of two Reserve Watchers be sanctioned— one to be attached to the Forest Guard for the Tiruttani Series and the other to the Forest Guard, Pallipat.

507. *Range Officers.*— It is suggested that **Kelambakkam Range** may be wound up and the Range Officer with his Range Clerk and Peon shifted to Tiruttani to form a newRange to look after the reafforestation of the Reserved Lands in the Tiruttani and Pallipat sub-Taluk portion of Tiruvallur Range as per the prescriptions of the Afforestation Working Circle. The forest areas constituting Kelambakkam Range with the portective staff may be partitioned between Chingleput and Madurantakam Ranges. This arrangement, besides being economical should work smoothly as the work load in Chingleput, Kelambakkam and Madurantakam Ranges is neither heavy nor of an arduous nature.

508. *Assistant Conservator of Forests.*— To ensure success of regeneration works under the Afforestation and Red Sanders Plantation Working Circles and timely and proper execution of cultural operations as per the prescriptions of the Cashew Plantation Working Circle in the porposed Tiruttani Range and residuary Tiruvallur Range it is suggested that the Assistant Conservator of Forests attached to the Division may, along with one Junior Assistant taken from the existing staff of the District Forest Office and his Peon and Jeep Driver, be stationed at Tiruvallur and that both Tiruvallur and the new Tiruttani Range be placed under his direct control subject to overall control by the District Forest Officer. In such an event the Assistant Conservator of Forests will not be saddled with any work in the other Ranges, the responsibility for which will rest solely with the District Forest Officer.

SECTION 9—CONSERVATION OF WILD LIFE.

509. While the division can boast of an impressive list of avi and aquatic fauna it has, in its forests, nothing much by way of game as understood by the forester and the sportsman, whether of the gun or camera toting type, except for some spotted deer and black buck in Thaiyur and Kolathur R.F's and an occasional wild boar, hare, partridge and quail in the patches of natural forest that still exist. The poverty of game in the division is understandable ; the depletion being a corollary to the destruction of the habitat wrought by man and his cattle, quarrying and the raising of man-made forests on an extensive scale. The future, however, does not have to be as bleak and holds out a ray of hope. If the prescriptions of the Red Sanders Plantation and Afforestation Working Circles of this plan are successfully implemented wild life is bound to regain a part of its pristine status in course of time in the reafforesated areas.

510. A brief sketch of the wild life in the division and what has been done for its betterment has been presented in Section—3 of Chapter II of Part I of this plan. Besides what has already been stated mention deserves to be made of the following three water fowl refuges under the control of the Wild Life Warden, Madras in addition to the one at Vedanthangal and notified by the Government as such under the Wild Birds and Animals Protection Act, 1912.

(i) Chembarambakkam.
(ii) Arapakkam.
(iii) Karikili.

Every year, a Reserve Watcher on the scale of pay of Rs. 130—3—160—4—180—5—195 is posted to each refuge from October to February, both months inclusive, to protect the brids from poachers.

511. Prior to 1974,the game rules in force in the division were those framed under clause (*h*) of section 21 of the Tamil Nadu Forest Act (Tamil Nadu Act V of 1882). These rules were applicable to all reserved forests in the state except those governed by the Niligiris Game Rules and Palni Hills Game Rules. In 1955 the Indian Board for Wild Life was constituted and at its instance the Government of India enacted comprehensive legislation by way of "The Wild Life (Protection) Act, 1972" to protect wild life in the country. This act was extended to the state of Tamil Nadu on 1st January 1974. Based on this act the State Government framed "The Wild Life (Protection) (Tamil Nadu) Rules 1975" which were notified in G.O. Ms. No. 1084, Forests and Fishesries Department, dated 11th December 1975 and came into force on 21st January 1976. The managmenet of wild life in the division as in other divisions of the state is now governed by these rules.

512. Period 1966–67 to 1975–76— Statistics pertaining to enforcement of the game rules during the period of the previous plan are furnished below :—

(i) Number of shooting licences issued :—

Year. (1)	*Number issued.* (2)	*Number renewed.* (3)	*Total.* (4)	*Revenue realised in rupees.* (5)
1969–70	2	..	2	200·00
1972–73	1	..	1	100·00
1973–74	1	..	1	100·00
1974–75	..	1	1	100·00

(ii) Number of animals shot— *Nil*.

(iii) Number of violations of game rules detected.—Nil.

(iv) Areas closed to shooting—Nil.

513. A few practical suggestions are made for implementation in connection with the conservation of wild life in the division. They are :—

(i) See whether a step-well can be dug in Thaiyur or Kolathur R.F. which will provide water in summer for the deer and black buck in these reserved forests. Also, provide a salt like for these animals.

(ii) See whether fodder can be supplied to these animals artificially using the departmental lorry, during the months.

(iii) Introduce Peafowl in Hanumanthaputheri, Appur and Vandalur R.F's, Koramangalam R.L. and certain well stocked Farm Forestry plantations. The birds, if necessary, can be procured from the Islamia Uravinmurai Trust Board, Veeracholan, Ramanathapuram District which runs a Government sponsored Peafowl farm.

(iv) Maintain a close watch on Narikoravar gangs who are the main destroyers of wild life for commercial purposes and book those indulging in poaching.

(v) Amply reward subordinates detecting poaching.

SECTION 10—FARM FORESTRY.

514. *Objects of management.*—The area under Reserved Forests and Reserved Lands accounts for only about 16·2 per cent of the total geographical area of Tamil Nadu whereas in Chingleput Division taking existing farm forests into consideration it is about 6·42 per cent. According to the National Forest Policy of India laid down in 1952 the proportion of land to be kept permanently under forests is placed at 33 per cent of the total land area. The proportion of the forest area not only in this state but also in this division falls very much short of this standard. Moreover, what natural forests are left after converting the comparatively better type of forests into Cashew and Eucalypt plantations are in a hopelessly degraded condition while vast extents of reserved lands in Thiruvallur Range are absolutely barren and the only function they serve is that of low quality pasture for village cattle. The villagers, therefore, face a chornic scarcity of feul and timber. Efforts had perforce to be made to design a scheme to raise forests on "Poromboke" lands not suited to agricultue to meet exclusively the rquirements of the villagers in respect of forest produce, divert cow dung from the village hearth to the field and to aid soil and moisture conservation which are essential requirements of agriculture. With these objectives in view the scheme of Farm Forestry was formulated and launched during the Third Five-Year Plan.

515. *General constitution.*—The formulation and launching of the scheme was preceded by a reconnaisance survey of lands available for planting under the scheme which was carried out in 1957–58 by a special division constituted for the purpose. The survey disclosed that the extent of 20·23 hectares (50 acres) and above blocks available in the division for planting was 1,403·96 square kilometres. Of this extent 63·45 square kilometres has since been planted leaving a balance of 1,340·51 square kilometres for future planting. Incidentally, if the balance area is also fully planted up the area under forests under the management of the Forest Department will shoot up from a paltry 6·42 per cent at present to an impressive 23·40 per cent in the future and bring it on a par with the national average of 23·1 per cent. No doubt some of the areas that were available way back in the fifties when the reconnaisance survey was carried out may not now be available for planting up with tree crops due to assignment of land to the weaker sections of the community and transfer to other departments for implementing Plan schemes and so on since then, but all the same a major part of it shouldbe still available and if effectively afforested under the scheme should increase the forest potential of the division considerably. A part of the future strategy of the department should therefore, be to concentrate heavily on the implementation of this Five Year Plan Scheme. A taluk-wise abstract of the area listed out as being available for plantin of the area already planted up and the balance area available for planting is furnished in the subjoi statement, whereas the detailed list of areas avaialbe is furnished in appendix XVI.

STATEMENT OF AREA AVAILABLE FOR RAISING FARM FORESTS IN FUTURE.

Serial number and name of taluk.		*Area of 20,23 hectares and over blocks selected as fit for planting.*	*Area planted up till the end of 1975-76 in hectares.*	*Balance area available for planting in hectares.*	*Remarks.*
(1)		(2)	(3)	(4)	(5)
1	Chingleput	21,151.30	1,192.68	19,958.62	
2	Kancheepuram	18,922·88	693.51	18,229.37	
3	Tiruvallur	15,251.21	1,064.53	14,186·68	
4	Sriperumbudur	11,271.85	1,032.04	10,239·81	
5	Tiruttani	19,378.80	978.25	18,400.55	
6	Ponneri	23,138·16	754.59	22,383.57	
7	Madurantakam	25,281.54	410.00	24,871.54	
8	Saidapet	6,000.33	218·93	5,781·40	
	Total....	1,40,396·07	6,344.53	1,34,051·54	

516. *Planting programme.*—Planting was commenced in 1960–61 and till the end of 1975–76 an extent of 60·64 square kilometeres was planted up leaving a balance of about 1,343.31 square kilometres to be afforested in future years. The average annual target works out to 3,79 square kilometres. As already pointed out there is a strong case for its being stepped up steadily over the years. The District Forest Officer should therefore, ask for increased financial allotments under this scheme every year.

517. *Method of treatment.*—The silvicultural treatment for new areas will be concentrated artificial regeneration and in lands other than tank beds the present practice of clearing, uproota and tractor ploughing before planting will be continued. In the case of existing plantations the simple coppice system will be followed with restocking of sizable blanks with suitable species i soil conditions permit.

518. *Choice of species.*—In sites liable to water-logging it will be Acacia arabica, on salin alkali sites Acacia leucophloea or such other species that will thrive on such soils and in other areas it will be Eucalyptus tereticornis. . While this will be the general pattern the District, Forest Officer may]inrtoduce other speciae with the concurrence of the Conservator of Forests. Cashew has not been recommended because of the low yields and difficulty in protecting the crop in small scattered plantations. Tank beds liable to prolonged stagnation of water which will result in the killing out of the planted seedlings should not be planted up. In some of these tanks this draw back does not extend to their foreshores in which case the foreshores could, with profit be planted up.

519. *Espacement.*—The espacement will be 2 m. by 2 m. for Eucalypt and 3.50 m. by 3.50 m for other species.

520. *Regeneration technique*—The regeneration technique will consist of planting container plants in 30 cm. cube pits with the commencements of the south-west shower or as the water recedes depending on the type of area and pattern of water storage if they are tank beds. The nursery practice and subsidiary silvicultural operations to be followed have been dealt with in detail in the chapters on the Eucalypt plantation and Afforestation working circles and may be followed with such modifications as found necessary.

521. *Rotation*—The rotations followed over the rest of the state viz., ten years for Babul and eight years for Eucalypt will be followed. For other species the rotation will be fixed in consulation with the Conservator of Forests.

522. *Exploitation*—Cashew usufructs will be exploited departmentally. The other plantations will be exploited through contractual agency unless they are allotted to industries in wich case the conditions on exploitation will be laid down by the Government-

523. It is necessary to tap the by-products of Babul to make the scheme more remunerative. There is demand for Babul gum which is an excellent substitute for gum arabic of commerce. The pods make good fodder for cattle and goats and in older plantations goats could be permitted to graze on payment of a nominal fee. The bark contains a fair amount of tamin and the sale of bark to the tanning industry at the time of clearfelling the plantations may be explored,

524. **Closure** to **grazing**—The period of closure to grazing will be as follows : —

(i) Newly raised plantations—5 years inclusive of the year of planting.

(ii) Felled plantations—3 years inclusive of the year of felling.

525. *Sharing of revenue with panchayats*.—The revenue realised by the sale of the plantations raised on lands vested with Panchayats is to be shared equally by the Forest Department and the concerned Panchayat. Initially the revenue is to be credited to the relevant head of account of the Forest Department and then transferred to the Panchayat concerned by book adjustment during the month of March. The entire expenditure on raising and maintaining the plantations will, however, be met by the Forest Department- (G.O. Ms. No. 117, Agriculture, dated 12—1—1971)

526. *Control*—The following control records will be maintained by the District Forest Officer :

(i) Control book.

(ii) Record of works.

(iii) Control journal.

(iv) Plantation and Nursery journals.

(v) A map showing the location of the plantations

527. A map of the district showing the location of the existing plantations is appened to this plan.

528. Two statements one showing the yiled from Cashew plantations from 1972 onwards when departmental collection was introduced, and the other the prices fetched and yiled obtained from felled Eucalypt plantations from the inception of the scheme upto 1975—76 are furnished below. No Babul plantations have been felled so far.

STATEMENT SHOWING THE YIELD OF RAW NUTS FROM FARM FORESTRY CASHEW PLANTATIONS.

Name of range.	*Name of panchayat union.*	*Serial number.*	*Year and locality.*	*Area in hectares.*	Total yield in kilograms. 1972.	1973.	1974.	1975	1976.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Tiruvalluar Farm Forestry	Gummidipoondi	1	1961 Amirthamangalam	41·10	2666·000	613·000	398·000	395·000	1,901·500
		2	1962 Madarapakkam	20·00	48·000	70·000	0·250	13·000	94·000
		3	1963 Manallur	24·00	23·000	5·000	4,750	..	..
		7	1965 Sedilvakkam	21·00	15·000	2·000	..	..	..
		10	1967 Amirthamangalam	14·10	256·000	924·000	250·000	540·000	1,814·750
		9	1967 Pallavada	20·00	30·000	84·000	15·000	75·000	321·000
		11	1968 Madarapakkam	20·00	..	..	7·500	52·000	75·000
		13	1969 Pallavada	32·00	..	..	2,250	78,000	214·000
	Kadambathur	1	1961 Koppur	38·30	1,105·000	450·500	842·000	145·500	1,752·000
		2	1962 Vengathur	20·00	460·000	304·000	425·000	193·000	197·500
		3	1963 Perambakkam	30·00	131·000	90·000	131·000	161·000	54·000
	Sholavaram	1	1962 Nayar	38·00	260·000	153·000	241·000	206·000	211·000
		2	1963 Chinnambedu	6·00	..	..	6·000	..	..
	Ramakrishnarajupet	1	1962 Santhanavenugopalapuram,	40·10	155·000	71·000	168·000	21·500	33·750
		2	1963 Paivalasa	21·00	22·000	58·000	141·000	3·750	9·000
		5	1967 Periyanagapoondi	12·24	..	..	..	..	..
	Tiruvallur	3	1963 Keelamur	35·00	64·000	29·000	66·500	12·000	162·000
		5	1965 Thanneerkulam	17·00	..	..	..	..	..
	Uthukottai	1	1961 Enambakkam	42·00	..	31·000	16·000	10·000	59·000
		2	1962 Vadamadurai	20·00	260·00	152·000	79·500	70·000	102·000
		3	1963 Koduvalli	34·00	48·750	55·000	31·500	9·000	14·750

		4	1964	Vadamadurai	20·00	..	38·500	..	..	11.250
		7	1967	Vadamadurai	23·00	42·000	153·000	102·000	2·000	121·000
	Villivakkam	2	1962	Pothur	17·00	8·000	30·500	25·000	81·000	13·750
	Thiruvelangadu	1	1962	Venugopalapuram	32·00	8·000	2·000	2·000	1·000	12·750
	Poondi	2	1962	Katchur	20·23	..	..	..	..	..
hingleput Farm Forestry ..	Tirukalikundram	1	1960	Manamai	40·00	1,000·000	425·500	563·500	195·500	1·000
		2	1960	Puliyur	55·00	152·000	57·000	25·000	51·000	14·000
		6	1960	Kadambadi	20·00	484·000	399·000	240·000	134·000	0·600
		8	1961	Vallipuram	20·00	131·000	57·500	97·000	62·000	0·500
		15	1971	Alagusamudiram	20·00	..	..	..	..	..
	Sriperumbudur	1	1960	Killoy	40·00	576·000	310·000	866·000	200·000	632·000
		2	1960	Sriperumbudur Grazing Ground	26·00	55·000	91·000	155·000	118·000	Not available
		11	1961	Alagoor	45·00	16·000	12·000	60·000	22·000	115·000
		12	1961	Echoor	20·00	251·500	270·000	689·000	129·000	525·000
	St. Thomas Mount	2	1962	Madambakkam	21·04	..	..	..	..	..
	Poonamallee	1	1962	Kuthambakkam	23·60	703·000	259·000	816·000	318·900	561·700
	Kancheepuram	2	1962	Melkadirpur	20·00	166·000	123·500	155·000	14·000	5·000
		15	1970	Melapadavur	20·00	..	..	..	..	..
	Walajabad	1	1963	Parandur	36·00	..	4,500	12·000	..	..
Tambaram	Kundrathur	17	1962	Naduveerapattu	25·20	..	80·000	162·000	75·000	Not available
Madurantakam	Acharapakkam	3 and 6	1962 and 1964	Kattukaranai	60·00	25·500	7·000	23·000	..	Do.
	Lathur	1	1963	Lathur	40·00	280·000	351·000	274·000	12·000	Do

N.B.: Figures for the years prior to 1972 are not readily available.

STATEMENT OF YIELD AND PRICES FETCHED FOR FELLED FARM FORESTRY EUCALYPT PLANTATIONS.

Name of Range.	*Name of Panchayat Union (Block).*	*Serial number.*	*Year and locality.*	*Area in hectares.*	*Year of felling.*	*Revenue realised in rupees.*	*Revenue per hectare in rupees.*	*Total yield in tonnes.*	*Yield per hectare in tonnes.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Chingleput Farm Forestry	Kundrathur	3	1965 Padappai (Part)	20·00	1972–73	8,95·00	44·75	12·500	0·63	Balance area felled in 1974–75.
Do.	Do.	17	1962 Naduveerapattu	25·50	1973–74	3,015·00	118·24	31·000	1·22	....
Do.	St. Thomas Mount	2	1962 Madambakkam	21·00	1973–74	7,000·00	333·33	79·000	3·76	....
Madurantakam	Madurantakam	1	1961 Andavakkam	30·40	1973–74	9,255·00	304·44	159·000	5·23	....
Do.	Acharapakkam	3	1962 Kattukaranai	20·20	1973–74	4,150·00	205·44	100·000	4·95	....
Chingleput Farm Forestry	Tirukalikundram	3	1960 Poonjeri	29·50	1973–74	3,210·00	108·81	51·000	1·73	....
Do.	Do.	7	1961 Vallipuram grazing ground.	40·50	1973–74	2,160·00	53·33	50·000	1·23	....
Do.	Poonamallee	1	1952 Kuthambakkam	24·90	1973–74	14,260·00	572·69	176·500	7·09	....
Do.	Tirukalikundram	9	1962 Valuvadur	21·50	1973–74	7,625·00	354·65	129·750	6·03	....
Do.	Sriperumbudur	11	1961 Alagur	44·50	1973–74	5,255·00	118·09	41·500	0·93	....
Do.	Do.	12	1962 Echoor	20·60	1973–74	5,815·00	282·28	110·000	5·34	....
Do.	Kancheepuram	2	1962 Melkadirpur	19·40	1973–74	2,515·00	129·64	39·000	2·01	....
Tiruvallur Farm Forestry.	Villivakkam	1	1961 Ambathur	21·00	1973–74	2,510·00	119·52	30·000	1·43	....
Do.	Tiruvallur	2	1962 Thanneerkulam	21·50	1973–74	11,400·00	530·23	120·000	5·58	....
Do.	Poondi	2	1962 Katchur	20·20	1973–74	4,415·00	218·56	65·000	3·22	....
Do.	Gummudipoondi	2	1962 Madarpakkam	20·23	1973–74	6,050·00	299·06	60·000	2·97	....
Do.	Sholavaram	1	1962 Nayar	38·50	1973–74	27,670·00	718·70	354·000	9·19	....
Do.	Uthukottai	1	1961 Enambakkam	42·50	1973–74	5,775·00	135·88	90·000	2·12	....
Do.	Do.	2	1962 Vadamadurai	20·20	1973–74	2,495·00	123·51	40·000	1·98	....
Do.	Villivakkam	2	1962 Pothur	17·80	1973–74	6,285·00	353·08	72·000	4·04	....
Do.	Kadambathur	2	1962 Vengathur	20·20	1973–74	10,660·00	527·72	108·000	5·34	....

Name of Range.	Name of Panchayat Union (Block).	Serial number.	Year and locality.	Area in hectares.	Year of felling.	Revenue released in rupees.	Revenue per hectare in rupees.	Total yield in tonnes.	Yield per hectare in tonnes.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Madurantakam	Lathur	1	1963 Lathur	40·50	1974–75	810·00	20·00	8·000	0·19	....
Do.	Madurantakam	2	1964 Silavattam	22·70	1974–75	2,775·00	122·24	30·000	1·32	....
Do.	Do.	3	1965 Nallur	18·60	1974–75	1,550·00	83·33	33·000	1·78	....
Do.	Acharapakkam	6	1964 Kattukaranai	40·50	1974–75	5,630·00	139·01	145·500	3·64	....
Do.	Do.	7	1965 Velamore	12·95	1974–75	6,820·00	526·64	145·000	11·19	....
Do.	Do.	8	1965 Pathiri	19·42	1974–75		351·19		7·47	....
Tambaram	St. Thomas Mount	3	1963 Chittlapakkam	33·20	1974–75	2,275·00	68·52	25·000	0·75	....
Do.	Kundrathur	20	1964 Nallur	20·20	1974–75	650·00	32·18	Not furnished.	Not furnished.	....
Chingleput Farm Forestry.	Uthiramerur	1	1961 Perunagar	47·40	1974-75	1,710·00	36·08	23·000	0·48	....
Do.	Do.	2	1962 Thirupulivanam	21·10	1974-75	1,110·00	53·60	18·100	0·86	....
Do.	Do.	3	1963 Perunagar	39·30	1974-75	340·00	8·65	5·000	0·13	....
Do.	Tiruporur	1	1962 Vembedu	19·40	1974-75	2230·00	114·94	30·500	1·57	....
Do.	Do.	4	1964 Vembedu	20·20	1974-75	5,490·00	271·79	64·000	3·17	....
Do.	Do.	3	1963 Oragadam	45·30	1974-75	6,355·00	140·29	80·390	1·77	....
Do.	Do.	2	1963 Thirunilai	35·60	1974–75	235·00	6·60	6·000	0·17	....
Do.	Kancheepuram	3	1963 Kambarajapuram	55·40	1974-75	3,660.00	66·06	42·000	7·58	....
Do.	Do.	5	1964 Kalur	34·40	1974-75	340·00	9·88	5·000	0·14	....
Do.	Do.	6	1964 Melkadirpur	20·20	1974–75	61·55	3·05	1·000	0·05	....
Do.	Do.	8	1965 Vedal	20·20	1974-75	107·00	5·30	2·000	0·02	....
Do.	Tirukalikundram	10	1963 Modaiyur	14·60	1974-75	10,010·00	685.62	105·000	7·19	....
Do.	Walajabad	1	1963 Parandur	36·40	1974-75	159·00	4·37	2·000	0·05	....
Do.	Kancheepuram	4	1964 Singadivakkam	33·20	1974–75	4,035·00	121·54	64·250	1·94	....

Do.	Walajabad	2	1965	Nelvoy	21·50	1974–75	110·00	5·12	2·000	0·09	....
Do.	Poonamallee	2	1964	Kuthambakkam	20·20	1974–75	6,645·00	328·96	90·000	4·46	....
Do.	Kundrathur	2	1963	Manimangalam	43·50	1974–75	55·00	1·26	4·000	0·09	....
Do.	Do.	1	1963	Valayakaranai	19·40	1974-75	12,010·00	619·07	84·000	4·33	....
Do.	Do.	3	1965	Padappai (Part)	10·40	1974-75	2,675·00	257·21	32·000	3·08	Balance felled in 1972–73.
Chingleput Farm Forestry.	Kattankolathur	4	1964	Kadambur	30·40	1974–75	3,030·00	99·67	53·000	1·74	....
Do.	Do.	3	1964	Kolathur	20·20	1974–75	63·00	3·12	2·000	0·10	....
Do.	Kundrathur	4	1964	Appur	22·30	1974–75	1,960·00	87·89	28·000	1·26	....
Do.	Kattankolathur	5	1965	Perumattunallur	20·20	1974-75	12,800·00	633·66	106·000	5·25	....
Do.	Sriperumbudur	15	1968	Pondur	17·50	1974–75	15,525·00	887·14	101·000	5·77	....
Do.	Gummudipoondi	4	1964	Sanaputhur	21·50	1974–75	11,615·00	540·23	262·000	12·19	....
Do.	Do.	7	1965	Sedhilvakkam	21·50	1974–75	14,520·00	675·35	126·000	5·86	....
Do.	Do.	5	1964	Madarpakkam	33·20	1974–75	8,510·00	256·33	167·000	5·03	....
Do.	Sholavaram	3	1964	Nallur	32·00	1974-75	15,510·00	484·69	229·000	7·16	....
Do.	Do.	4	1965	Chinnambedu	23·10	1974–75	4,520·00	195·67	96·000	4·16	....
Tiruvallur Farm Forestry.	Kadambathur	3	1963	Perumbakkam	30·80	1974–75	20,305·00	659·25	446·000	14·48	....
Do.	Do.	4	1964	Koppur	22·70	1974–75	18,200·00	801·76	318·000	14·01	....
Do.	Tiruvallur	3	1963	Keelamur	35·60	1974–75	6,015·00	168·96	36·500	1·03	....
Do.	Do.	4	1964	Sittaldur	26·70	1974-75	4,015·00	150·37	53·500	2·00	....
Do.	Do.	5	1965	Thanneerkulam	17·40	1974–75	2,710·00	155·75	37·000	2·13	....
Do.	Uthukottai	3	1963	Koduvalli	34·40	1974–75	20,205·00	587·35	273·500	7·95	....
Do.	Do.	4	1964	Vadamadurai	20·20	1974-75	16,000·00	792·08	171·000	8·47	....
Do.	Do.	5	1965	Vadamadurai	27·50	1974–75	12,515·00	455·10	175·000	6·36	....
Do.	Pallipat	4	1964	Ramasamudiram	20·20	1974-75	285·00	14·11	Not available.	Not available.	....
Do.	Tiruttani	2	1964	Krishnasamudiram	36·80	1974-75	640·00	17·39	Do.	Do.	....

Name of Range.	*Name of Panchayat Union (Block).*	*Serial number.*	*Year and locality.*	*Area in hectares.*	*Year of felling.*	*Revenue released in rupees.*	*Revenue per hectare in rupees.*	*Total yield in tonnes*	*Yield or hectare in tonnes.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Tiruvallur Farm Forestry.	Tiruttani ..	3	1965 Krishnasamudiram	22·70	1974-75	450·00	19.82	Not available.	Not available.	
Do. ..	Gummudipoondi ..	3	1963 Manallur	24·30	1975-76	11,575·00	476·34	166·000	6·83	....
Do. ..	Do. ..	6	1965 Soorapoondi ..	26·70	1975–76	3,550·00	132·96	28·000	1·05	....
Do. ..	Poondi	5	1965 Devanthavakkam	22·30	1975-76	5,100·00	228·70	84·000	3·77	....
Do. ..	Ramakrishnarajupet	2	1963 Paivalasa ..	21·90	1975-76	3,500·00	159·82	29·000	1·32	....
Do. ..	Do. ..	3	1964 Vediyankadu ..	20·20	1975-76	8,015·00	396·78	60·000	2·97	....
Do. ..	Do. ..	4	1965 Gopalapuram ..	20·30	1975-76	3,050·00	150·25	55·000	2·71	....
Do. ..	Tiruvelangadu ..	4	1965 Arungulam	20·20	1975-76	3,550·00	175·74	54.000	2·67	....

SECTION 11—CONTROL.

529. The control records and maps which are to be maintained in the District Forest Office have been dealt with under the various working circles. Brief details of each of these records and the manner in which they should be maintained are given below.

530. *Control Book.*—This record will show all operations actually carried out in connection with the exploitation of forest produce done every year in each felling or plantation series as per the prescriptions of the working plan, as well as such exploitation as is neither prescribed nor suggested but is carried out. The yield of timber or other forest produce exploited and the revenue derived thereform as against the forecast in the working plan will also be entered therein.

531. *Record of works.*—This is a brief record to be written up annually of all works carried out under the prescriptions of recommendations of the working plan as well as such measures as are neither prescribed nor suggested but are carried out.

532. *Register of deviations.*—This is a record showing every case of deviation from the prescriptions of the working plan, the need for the deviation and the authority by whom it was sanctioned.

533. The control book, record of works and the register of deviations will bn maintained separately for each working circle and shall be written up annually. A list of the control forms to be maintained for each working circle is given in Appendix XV.

534. *Control journal.*—The control journal will give a detailed account of the management of the division. The main object of the journal is to record observations on the and spot information not obtainable from precribed forms. It will be in short a running commentary on all objects of administation, specially on the extent to which the objects of the working plan have been realised and the extent to which the methods precribed have been found suitable. The journal is intended to give the District Forest Officer an opportunity for recording suggestions for modification and improvement in the method of working laid down in the working plan. The journal will also include a summary of annual revenue and expenditure in a form to facilitate comparison with the financial forecast made in this plan.

535. The control journal will be maintained separately for each working circle and must be written up by the District Forest Officer himself or his Gazetted Assistant. It should therefore be taken to camp and critical observations recorded in it during or after inspection. The journal if maintained properly will be of great help when the plan comes up for revision. A model form showing the headings under which the control journal may be written up is given in Appendix XV. Additional headings that may be required may be inserted. General comments in addition to the prescribed headings may be noted separately at the end.

536. *Fire control journal.*—This is a record maintained separately to show the details of fire protection measures adopted in the division and the results achieved.

537. *Control maps.*—The control maps will show on a 4 inches to 1 mile (1 centimetre—0.1584 kilometre) scale, the areas proposed for working every year, the area actually worked, areas annually regenerated with the name of the species planted and the year of planting.

538. *Fire maps.*—These will be separate from control maps and will show the results of fire protection and the areas burnt every year. Serial numbers will be given to all fires in chronological order.

539. A copy of the entries made during the year in the control book, the record of works, register of deviations and the control journal will be submitted to the Conservator of Forests soon after the close of each financial year. A copy of the fire map will be also submitted annualy to the Conservator of Forests for scruitiny. The control maps will be posted regularly and made available to the Conservator of Forests for check at the time of officei nspection.

SECTION 12—PLANTATION AND NURSERY JOURNALS.

540. In addition to the control forms prescribed in the previous section plantation and nurser journals will be maintained whereever artificial regeneration operations are involved.

541. *plantation j-ournal*—plantation journal will be maintained for each plantation. It will contain an index, a location sketch and a sketch of the plantation on a scale of 16 inches to a mil (1 centimetre W0,03963 ilometre). The area as computed by the Forest Officer and the referenc

number and in which the computed area was communicated to the Range Officer will be noted by the Range Officer on the sketch and attested by him with date. In additon, the journal will contain information on the following :

(i) A preamble consisting of details of the calender year of raising, name of Reserve Forest or Reserved Land, Beat Section, Range, Series and Working Circle.

(ii) A description of the factors of the locality as such as Rainall, Soil, Aspect and Type of original vegetation.

(iii) Item-wise detail of works sanctioned and executed with specifications, prescribed period of execution, actual period of execution, reasons for delay in execution and deviations from specifications, if any

iv) A financial statement giving item-wise details of expenditure and revenue with dates and quantities. The statement should be closed at the end of each financial year after effect has been given to recoveries of excess expenditure, if any, and the expendture incurred and revenue realised per hectare during the year worked out and furnished in addition to the total expenditure and revenue of the year. In the case of Cashew plantation the net yield of raw nuts should be furnished while the gross yield and percentage of deficit should be furnished in the remarks column.

(v) Technical observation and instructions of the Range Officer and inspecting officers These shoudl be in the hand writing of the officer concerned and shall not consist of copies of inspection notes pasted in the journal. The observations shall alo cover the cost-factor in relation o quality of the work execution and adequacy of the yiled.

In short a plantation journal should give a complete history of the plantation and an evaluation of its economics in a brief and intelligible form.

In order to ensure continuity in the history of a plantation it is suggested that a new journal numbered as Volume II be opened for the following rotation and that the previous journal be numbered as Volume I and stitched to the second volume at its beginning.

542. *Nursery journal.*—Nursery journal will be maintained for each year,s nursery on the same lines as a plantation jounral but with suitable modifications to suit nursery work. Seed provenance, germination per cent, plant percent, nrsery technique in al. its aspects, specificatons of containers used quantum of planting stock produced are some of the important items onwhich detailed information should be furnished.

543. Both the plantation and nursery journals will maintained personally by the Range Officer and copies of the same will be maintained in the District Forest office.

CHAPTER IX—ESTABLISHMENT AND LABOUR.

SECTION 1—ESTABLISHMENT.

544. The existing sanctioned strength of the staff in the division has been furnished in Chapter VI of Part I of this plan. In addition the appointment of one Forest Guard and 2 Reserve Watchers has been suggested in section 8 of the chapter on miscellaneous regulations for tackling the reafforestation work prescribed in the reserved Lands in Tiruttani and Pallipet sub-talub in Tiruvallur Range. It has also been suggsted that the Range Officer,, Kelembakkam and his Office staff may be shifted to Tiruttani, If this suggestion materialises then a new Range may be created at Tiruttani. In addition to reafforestation of a vest area of barren hills, which in itself is difficult and slow process, the reservaton and demarcation of the numerous and scattered Reserved Lands has to be attended to· There will thus be ample work for a Range Officer at Tiruttani. In Kelambakkam Range on the other hand the work is generally of a routine nature of maintenance of existing plantations and hence can be devided between Chingleput and Madurantagam Range without important of overall efficiency.

545. A statement showing the jurisdiction of existing Sections and Beats is furnished in Appendix XIV.

SECTION 2—LABOUR.

6. There is no details of skilled and unskilled labour in the division.

CHAPTER X—FINANCIAL FORECAST AND COST OF THE WORKING PLAN

SECTION 1—FINANCIAL FORECAST.

547. The following statements show (15 the estimated revenue and expenditure in respect of each (working circle for the period of this Plan and (2) an abstract of the forecast:—

1. *Cashew Plantation Working Circle.*

Year.	*Revenue in rupees.*	*Expenditure in rupees.*
1976–77	12,09,370·00	1,23,650·00
1977–78	12,39,010·00	7,63,860·00
1978–79	12,48,350·00	2,13,580·00
1979–80	12,81,670·00	2,18,610·00
1980–81	12,60,780·00	1,27,530·00
1981–82	12,52,780·00	2,03,800·00
1982–83	12,49,420·00	1,77,000·00
1983–84	12,49,390·00	2,37,290·00
1984–85	12,65,840·00	1,22,120·00
1985–86	12,63,060·00	56,030·00

2. *Eucalypt Plantation Working Circle.*

1976–77	2,22,860·00	20,700·00
1977–78	47,300·00	2,63,700·00
1978–79	51,700·00	1,80,000·00
1979–80	30,360·00	1,19,700·00
1980–81	53,240·00	1,00,800·00
1981–82	1,03,180·00	83,700·00
1982–83	2,95,680·00	80,100·00
1983–84	91,740·00	76,500·00
1984–85	2,21,100·00	66,600·00
1985–86	1,00,100·00	13,300·00

Year.	Revenue in rupees.	Expenditure in rupees.
3. Red Sanders Plantation working Circle.		
1976–77	200·00	60,800·00
1977–78	200·00	48,450·00
1978–79	200·00	41,800·00
1979–80	200·00	42,750·00
1980–81	200·00	44,650·00
1981–82	200·00	43,700·00
1982–83	200·00	43,700·00
1983–84	200·00	45,600·00
1984–85	200·00	33,250·00
1985–86	200·00	34,200·00
4. Afforestation Working Circle.		
1976–77		60,000·00
1977–78		61,500·00
1978–79		60,000·00
1979–80		56,000·00
1980–81		62,500·00
1981–82		62,500·00
1982–83		64,000·00
1983–84		60,000·00
1984–85		54,500.00
1985–86		62,500·00
5. Minor Forest Produce Working Circle.		
1976–77	500·00	1,250·00
1977–78	500·00	1,250·00
1978–79	500·00	1,250·00
1979–80	500·00	1,250·00
1980–81	500·00	1,250·00
1981–82	500·00	1,250·00
1982–83	500·00	1,250·00
1983–84	500·00	1,250·00
1984–85	500·00	1,250·00
1985–86	500·00	1,250·00

Year.	Revenue in rupees.	Expenditure in rupees.
6. *Grazing Working Circle.*		
1976–77	37,250·00	1,500·00
1977–78	37,250·00	1,500·00
1978–79	37,250·00	1,500·00
1979–80	37,250·00	1,500·00
1980–81	37,250·00	1,500·00
1981–82	37,250·00	1,500·00
1982–83	37,250·00	1,500·00
1983–84	37,250·00	1,500·00
1984–85	37,250·00	1,500·00
1985–86	37,250·00	1,500·00
7. *Miscellaneous Regulations.*		
1976–77	1,30,100·00	2,52,200·00
1977–78	2,86,700·00	2,53,500·00
1978–79	1,11,000·00	2,53,200·00
1979–80	1,16,500·00	2,52,200·00
1980–81	1,21,800·00	2,52,200·00
1981–82	2,75,660·00	2,52,200·00
1982–83	3,75,720·00	2,52,200·00
1983–84	1,55,330·00	2,52,200·00
1984–85	1,37,690·00	2,52,200·00
1985–86	1,19,500·00	2,52,200·00

8. Establishment, motor vehicles and office contingencies—The annual expenditure on establishment, motor vehicles and contingencies is estimated at about Rs. 8,00,000 as indicated below:

Pay of Officers	19,200.00
Pay of establishment	3,73,574.00
Travelling Allowance	50,300.00
Dearness Allowance	1,06,112.00
House rent allowance	41,200.00
Fixed travelling allowance	27,200.00
Medical charges	4,262.00
Motor Vehicles	73,923.00
Office contingencies	36,306.00
Additional dearness allowance	51,767.00
City compensatory allowance	12,800.00
	7,96,644.00 or 8,00,000.00

9. Abstract of the forecast—The total revenue and expenditure for the whole division for each year is estimated as follows:

Year.				Revenue in rupees.	Expenditure in rupees.	Surplus rupees.	Deficit in rupees.
(1)				(2)	(3)	(4)	(5)
1976–77	..	..	..	**16,00,280.00**	**13,20,100.00**	**2,80,180.00**	..
1977–78	..	..	..	16,10,960.00	21,93,760.00	..	5,82‘800.00
1978–79	..	..	..	14,49,000.00	15,52,030.00	..	1,03,030.00
1979–80	..	..	..	14,16,480.00	14,92,010.00	..	75,530.0,00
1980–81	..	..	..	14,73,770.00	13,90,430.00	83,340.00	..
1981–82	..	..	..	16,69,570.00	14,48,650.00	2,20,920.00	..
1982–83	..	..	..	19,58,770.00	14,19,750.00	5,39,020.00	..
1983–84	..	..	..	15,34,410.00	14,74,340.00	60,070.00	..
1984–85	..	..	..	17,02.580.00	13,31,420.00	3,71,160.00	..
1985–86	..	..	..	15,20,610.00	12,20,980.00	2,99,630 .00	..

SECTION 2—COST OF THE WORKING PLAN.

548. *The cost of preparation of this working Plan is given below*

Pay and allowances of Officer	**45,727.40**
Pay of establishment	**30,894.84**
Dearness Allowance	6,907.05
Additional dearness allowance	3,483.70
Other compensatory allowance	5,776.31
Travelling allowance	11,184.00
Office expenses	13,524.39
Motor vehicles	13,062.63
Medical charges	766.88
	1,31,327.20

*Includes arrears of pay and dearness allowance.

SUMMARY OF PRESCRIPTIONS.

PRESCRIPTIONS.

PARAGRAPHS

CHAPTER I—BASIS OF PROPOSALS.

Scope—This working plan deals with the whole of the Chingleput Forest Division.

Objects of management—The objects of management are briefly 280

(i) To maintain the forests in a state of increasing productivity for obtaining the maximum financial return per hectare.

(ii) To attempt to meet at least partially the agricultural pastoral and domestic needs of the local population and the states need for industrial raw material.

(iii) To take all measures to ensure the conservation and improvement of natures resources of soil, water and wildlife.

(iv) To exploit with due regard to silvicultural and horticultural principles the resoutces of the forests.

(v) To augment the forest resources by raising farm or village forests.

(vi) To preserve as nature reserves certain portions of the natural forest for recreational and educational purposes.

Working Circles—The following working circles have been constituted 282

	Area in square kilometres.
(i) Cashew Plantation	93.87
(ii) Eucalypt Plantation	54.47
(iii) Red sanders Plantation	13.91
(iv) Afforestation	18.00
(v) Minor Forest Produce	All the forests of the division.
(vi) Grazing	All the forests of the division except those closed to grazing.

The Fuel and Soil Conservation Working Circles of the previous Working Plan have been discontinued. 283

Period of the Working Plan—The Working Plan will be in force for a period of ten years, i.e., from 1st April 1976 to 31st March 1986.

CHAPTER II—THE CASHEW PLANTATION WORKING CIRCLE.

General—A description of the species, its distribution and utility has been furnished . . 285

Figures of imports of raw nuts and exports of kernels and shell liquid, and foreign exchange earnings have been furnished. 286

Objects of management—To optimise productivity of the existing plantations to meet the demands of the Cashew processing units. 287

General constitution and charctar of the vegetation—The working circle will consist of all the existing Cashew plantations except those that are complete failures and unsuited to restocking with the species and those raised outside forest limits under the scheme of Farm Forestry. 288

A list of failed Cashew plantations unsuited to restocking with the species and not included in the working circle is furnished. 289

Area—The area of the working circle is 93.87 square kilometres 290

Division intoplantation series—The plantations in each Range have been constituted into series as follows :— 291

Name of series.	*Area in sq. km.*
Tiruvallur	14.96
Tambaram	24.38
Kelambakkam	22.77
Chingleput	13.19
Madurantakam	18.57

Constitution of plantation seties—A list of plantations and their areas constituting each series has been furnished in tabular form. 292

It is laid down that the District Forest Officer should survey the 1964 Vandalur plantation, which lies outside Vandalur R.F., in consutation with the Revenue authorities and markti on the detailed management map as a sketch of the plantation is not available and its original boundaries are not discornible. 293

The average annual yield per hectare is very low being 33.25 kg. as against the state average of 125.90 kg. 294

The average price fetched per kilogram of departmentally collected raw nuts from 1971–72 to 1975–76 has been furnished. 295

The following package of horticultural practices has been prescribed under methods of treatment : 296

(i) Tending and beating up of the plantations raised in 1975.

(ii) Eradication of rank growth.

(iii) Periodical ploughing once in five years in younger plantations.

(iv) Thinning.

(v) Pest control measures.

(vi) Harvesting of usufructs (Departmentally).

(vii) Restocking of blanks of 5 hectares and above.

Rotation—Is left as an open question there will be no clearfelling and replanting during the period of this plan. 297

Regulation of yield—Since the species is a regular annual yielder the usefruits be harvested annually through departmental agency. 298

From the 4th. year onwards the species yields a sizeable quantity of nuts 10th. year onwards full yields are realised. 299

Conditions responsible for poor and good yields have been explained indetail. 300–303

Tending of plantations raised in 1975 weeding and soil-working to a radius of 0.60m and a depth of 15 cm. at the onset of the south-west monsoon in 1976 and beating up at the same time has been prescribed. A weeding and soil-working in 1977 around the 1976 refills has also been prescribed. **304**

Eradication of rank growth and ploughing—This treatment has been divided into two types viz., Type I which consists of clearing and uprootal of rank growth and ploughting which is prescribed for plantations that are 15 years and below in age and Type II which consists only of clearing and uprootal of rank growth which is prescribed for plantations over 15 years old. As far as the older plantations are concerned this cultural operation is prescribed to be carried out only in such of the plantations that are in need of it. **305**

Inter-cropping with legumes—This is prescribed to be taken up in Type I treatment plantations on a plot scale in order to fix atmospheric nitrogen in the soil. The work will be done departmentally if kumaridars are not forth coming and extended to type-II treatment plantations if the work proves successful and the cost of ploughing can be made up. 306

The programme for both the types of treatment have been drawn up and given in the form of tabular statements. 307

Thinning—The need for thinning has been explained. There will be only two thinnings, one in the 8th year and the other in the 15th year. The marking and felling rules have been firnished ; so also the thinning programme. 308–313

Adoption of pest controlmeasures—A list of the common pests and their control measures have been furnished. As the measures are costly they will be carried out only when an intensive attack is noticed with the concurrence of the Conservator of Forests. This restriction will not apply to stem borer attack which will be dealt with promptly whenever noticed by the local subordinates. 314

Harvesting of usefructs—Will be done departmentally. The procedure to be followed in accounting for the rawnuts has been detailed in paras 146 to 148. 315

Restocking of blanks of 5 hectares and above—The number of such blanks is 67 and their extent about 1580.48 ha. They lie scattered over 43 plantations. The main species for restocking will be Eucalyptus tereticornis. The technical specifications for the work have been furnished. A phased programme for the work has been drawn up and furnished. 316—318

Permanent demarcation of the restocked blanks has been prescribed as they will have to be transferred to the Eucalypt Plantation Working Circle at the time of revision of this plan. 319

Exploitation of the Eucalypt plantations raised in the blanks will be done on an eight year rotation. 320

Closure of grazing—The restocked blanks will be closed to grazing for a period of 5 years inclusive of the year of restocking. The period of closure may be extended by the District Forest Officer if necessary. On the other hand clearfelled plantations will be closed for 3 years inclusive of the year of felling. 321

Inspection paths—Will be 2 metres wide and will be maintained in the plantations as well as the restocked portions. 322

Fire protection—The boundary lines of the plantations and the 2 metre wide lines around the restocked areas will be kept clear of all growth. Otherwise, no special measures are considered necessary. 323

Control—A list of control records to be maintained has been furnished. A separate journal will be maintained for each restocked blank. 324–325

CHAPTER III—THE ENCALYPT PLANTATION WORKING CIRCLE.

Objects of management—To replace low productive scrub plains forests by high yielding plantations to meet the demand for fuel and industrial wood. 326

General constitution—The working circle will include the existing plantations and fresh areas proposed for planting with Eucalyptus tereticornis. Certain plantations have been excluded and these have been defined. 327

Area—The area of this working circle is 54.47 sq. km. 328

Character of the vegetation—Areas for conversion are of the southern thorn scrub and tropical dry ever-green scrub types defined in paragraph 57 and 59 respectively. Soil is generally a red gravelly loam. 329

Division into planting series—The working circle has been divided into five series as follows:

Name of series.	*Area in square kilometres.*	
(1)	(2)	
Tiruvallur	9.66	
Tambaram	8.48	
Kelambakkam	10.90	
Chingleput	7.51	
Madurantakam	17’92	330

All the existing plantations and the annual areas to be planted up have been marked on the detailed management maps. 331

Constitution of planting series—A list of plantations and future areas constituting each series has been furnished in tabular form. 332-333

Stockmapping.—Areas for future planting have been selected on the basis of stock-mapping. All the good areas having been planted up only marginal areas are left. 334

Valuation of the crop.—The areas for conversion do not contain any saleable growth. Existing plantations tend to be patchy. Average yield in the past has been 3‘20 tonnes of debarked wood per hectare besides some bark and brushwood. 335

Silvicultural system.—Clearfelling followed by concentrated artificial regeneration in the case of conversion ateas and the simple coppice system followed by restocking of sizable blanks in the year following the year of felling in the case of existing plantations. 336

Choice of species.—Eucalyputs tereticornis. E. camaldulensis is not prescribed because its yield is slightly less than that of E. tereticornis. 337

In patches unsuited to E. teretcornis, Acacia leucophloea will be planted on saline alkali sites and Acacia arabica on water-logged sites. 338

Rotation.—Will be eight years as is the case over the rest of the state. 339

Regulation of yield.—Will be by area. 340

Annual planting area.—The total planting area is assessed at 1120.98 hectares scattered over 12 forest blocks and it is prescribed to plant up this area over a period of nine years. 341

Disposal of plantation coups—Will be disposed of either by sale in public auction or ollotment to industries. Bark and top will be sold by the District Forest Officer in case of allotment to industries. 342

Felling season and lease period—will be between the beginning of June and the end of February subject to circular instructions regarding the lease period which is fixed in relation to the area of the coupe 343

Felling rules-As the regeneration of felled coupes will be mainly by coppice the followingrules have been laid down:

(i) Felling will be only by saw and the cut slanting.

(ii) The break on the stump shall not be frayed.

(iii) The height of the stump shall not exceed 15cm at any point.

(iv) Slash shall not be heaped on or in the vicinity of the stump.

(v) Work will commence from the farthest end and prooceed towards the nearest end. 344

Tabular statement of fellings—This has been prepared in detail and furnished duly indicating the number of the rotation in the remarks column. 345

Survey and temporary demacration of the annual regeneration area—survey and democration will be completed by the end of March of the year of planting. Demacration will be done with 2 metre wide cleared lines and small whitewashed cairns. 346

Preparation of the regeneration area—Preparatory work will consist of clear felling up-rootal, burning and tractor ploughing. 347

Espacement—will be 2m × 2m but for miscellanoeus species on unsuitable sites 3-5 × 3.5 m 348

Regulation of yield will be by area. 349

Aligning, marking and printing—Will be 30cmcube but for misellaneous species 40cm. cube. 350

Plating season—Will commence from June-July depending on the adequency of rain for the purpose.

The polipet will be removed completely before Planting and after planting the refilled soil will be firmly tamped. 351

Planting portions unsuited to Encalypt—Saline akkali sites will be planted with Acacia leucophloea while water-logged sits will be planted with Acacia arebica following the technique prescibed in paras 349 to 351. 352

Tabular statement of planting—This has been drawn up in detail and furnished. 353

Nursery—Will consist of container plants.The containers will be polipots of size. 15 cm. X 7 cm. made from 200 gauge polythene sleeves. They will have two holes punched at the bottom. The nursery practice to be followed has been furnished in detail. 354–359

Replacement of casulties—Will be done durig the first year before the close of the planting season.No beating up will be done during the second year unles s there has been considerable mortability due to reasons other than soil unsuitability. Regarding portions regenerated with miscellaneous species casulties will be replaced during the second year. 360

Weeding and soil working:

First year—Not prescribed due to ploughing.

Second year—Will be done to a radius of 0·60 m. and a depth of 15 cm. at the onset of the south-west monsoon

Third year—Will be done to the aforesaid prescriptions around refills of micellaneous specis during the second year and backward plants. 361

Climber cutting—The plantations shall always be kept clear of climbers by the subordinates. 362

Supplementary artificial regeneration—In felled plantations sizeable blanks will be restocked with suitable species during the year of felling. 363

Permanent demacration of plantations—The plantations raised will be demarcated stone slabs 1·05 m X 45 cm X 15 cm 364

Closure to graging—Newly raised plantations will be closed to grazing for a perid of 5 years (inclusive of the perid of planting and felled plantations for 3 years inclusiue of the year of felling.Extension of the closure period if found necessary is left to the discretion of the District Forest Officer. 365

Inspection paths—Formation and maintenance of 2 metre wide paths is prescribed 366

FIRE protection measure—No special measures are considered necessary- 367

Control—List of control records io be maintainod is furnished. 368

CHAPTER IV —RED SANDERS PLANTATION WORKING CIRCLE.

General —A detailed describtion of the tree and its distribution is given. It attains a girth of 0·91 m. to 1·50 m. and a height of 9 to 11 metres though in plantations on rich ground a height of 15 to 18 metres would probably be attainable (Troup). In its natural habit at it grows at elevatinos of 152 to 914 metres. It requires perfect drainage and grows particularly well on lateritic loam. It resists fire well but young plants are readily browsed by cattle and deer. The wood is hard, dark red to almost black and very valuable. It has a ready export market. The classification of the wood for export is furnished. If quality 'A' wood is fresh the Japanese offer even upto Rs. 10,000·00 a ton. The dye is believed to be used in colouring high class alcoholic liquors. 369–372

Objects of management —To convert uneconomical scrub forests into valuable timber forests and produce Red sanders timber for meeting both internal and external demand. 373

General constitution—The working circle will include the existing Red Sanders plantations, failed plantations of the species which are fit for replanting and new areas for planting. 374

Area —The area of this working circle is 13·91 sq. km. 375

Stock mapping—Most of the areas avaiable for planting with the species in Tiruvallur Range have been stockmapped but only the areas required for planting during the next 15 years have been included in the working circle. A list of areas stock mapped and the extent of the suitable areas selected have been furnished. 376

Character of the vegetation —The areas for conversion consit of the Southernthorn scrub and Tropical dry evergreen scrub types. The soil is generally a red gravelly loam. 377

Division into planting series—Four planting series have been formed as follows :—

Name of series.	*Area in square kilometrs.*
Mailapore series	5·50
Nemalur series	4·28
Poondi series	1·67
Allikuli series	2·46

378

All the existing plantations and the annual areas to be planted up have been marked on the detailed management maps. 379

Constitution of planting series—A list of areas constituting each series has been furnished is tabular form. 380

Analysis and valuation of the crop —Some of the plantations raised have been successful ; while failures were due to cattle damage. The best performance has been on red loamy soil in Mailapore R. F, but where laterisation has set in the rate of growth, is slower. A partial (10 per cent) linear enumeration survey was taken up i the earlier plantations in Mailapore R. F, to assess the survival percent and growth rate and the results are furnished in para 278. 381

Stockmapping —The areas included in this working circle for conversion have been occularly stockmapped and only areas suitable for planting with the species have been icluded. The areas do not contain any saleable growth. 382

Silviultural system —The system prescried is the clearfellig system followed by concentrated artificial regeneration. Regarding the existing plantations they will be effectively protected and thinned. 383

Choice of speceis —*Pterocarpus santalinus.* 384

Rotation—Will be the one of greatest volume production of heartwood or that of the highest income whichever is later. No data is available to fix the rotation and no plantations will come up for final felling during the perid of this plan. Hence, it is left an open question in this plan. Suggestions for laying out sample plots and recording increment data have been made. 385–386

Regulation of yield—Will be by area. 387

Annual planting area—The total planting area during the period of the plan is assessed at 687·38 ha. over four series. The annual area in each series is restricted to about 15 has due to the slow rate of growth and proneness to cattle damage. 388

Tabular statement of planting—This has been prepared and furnished for the period of the plan. 389

Survey and demarcation of the annual regeneration area—Should be completed by the end of March of the year of planting. Demarcation will consist of a 2 metre wide cleared line and small temporary white washed cairns constructed along the periphery. 390

Preparation of the regeneration area—Will be clearfelled, stumps uprooted and slash burnt by the end of May. Thereafter with the first showers in June the area will be tractor ploughed. 391

Espacement—Will be 3 m X 3 m. 392

Aligning marking and pitting—Will be done immediately after ploughing. The size of the pits will be 30 cms. cube. 393

Fencing—Will be done wherever necessary and will be of four or more strands of barbed wire as the situation may demand. The fence will be kept in position as long as the plantation is closed to grazing. 394

Planting season—Will commence from June-July depending on the adequacy of rain. Early planting, i.e., at the onset of the south-west monsoon gives the best results. Planting is best done on rainy days. 395

Planting technique—The polipot will be completely removed before planting. The soil that is refilled in the pits will be well tamped from the sides. 396

Nursery—General—The nursary stock for planting out will consist of nineteen to twenty months old nursery raised stumps which have been transplanted in polipots an nurtured in the containers for atleast four months. 397

Location of nurseries—The present practice of having small nurseries near the planting sites will be continued in the absense, of a central nursery in Tiruvallur Range. 398

Seed collection—Period of collection is April-May. They weigh about 1250 to a kilogram. Germination percent is 25 to 30 although it is said it could be 70 if sown fresh. Quantity to be sown per bed of 12 m. x 1·2 m. is 10 kg. Pretreatment and sowing technique has been furnished in detail. A bed should yield about 2,000 good stumps. 399

Stumping and transplanting of the stumps in polipots will be done in the month of January of the year of planting. The polipots will be of size 25 cm. x 13 cm. and of 200 gauge thick polythene filament with two small holes punched at the bottom for drainage. The potting mixture will be red loam and farm yard manure mixed in the proportion of 1:4. 400

The nursery will always be kept weeded and plant protection measures adopted if pest attack is noticed. 401

The container plants will be well watered before being sent to the regeneration area for planting. Backward planting stock should be retained in the nursery and treated with a 5 per cent urea foliar spray to boost its growth. How this is to be done is furnished. All nurseries should be equipped with hand operate sprayers. 402

Weeding and soil working—First year—Patch weeding and soil working will be done to a redius of 60 cm. and depth of 15 cm. only in areas where tractor ploughing was not done. Second year—Will be done to the aforesaid specifications at the onset of the south-west monsoon irrespective of whether tractor ploughing was done or not in the first year. 403

Third year—Will be done if found necessary.

Replacement of casualties—Will be done in the first year during the south-west and north-east monsoons and completed within a fortnight of the north-east monsoon setting in. Beating up will also be done in the second year. Thereafter no such work will ordinarily be needed. 404

Reclearing of rank growth—Will be done in the third year if found necessary. 405

Thinning—The species requires regular thinnings to promote the best growth. The first thinning will be mechanical. It will be done when the dominants reach a height of 12·75 metres and entail removal of 50 per cent of the stems. 406-407

The second thinning would become due when the stems reach a height of 18 metres which is about the maximum height it reaches. It is presumed that this height is reached after mid rotation by which time thinning in a crop should be completed. Hence, it cannot be predicted at this stage whether a second thinning would be necessary. Possibly, an increment felling which wil, help the trees to put on girth increment and induce natural regeneration so that a switch over to the more desireable shelter wood system may be made, may be necessary. The District Forest Officer will decide the issue in consultation with the Conservator of Forests after watching the performance of the plantations. 408

It has not been possible to fix the age at which thinning is to be carried out for want of data regarding the rate of growth. The District Forest Officer will, therefore, watch the performance of the plantations and thin them when they become due for it. 409

In the event of non-uniformity of growth the District Forest Officer will thin the portion requiring thinning and thin the balance area when it becomes due for it. The procedure to be followed in such cases has been prescribed. 410

Climber cutting—The plantations shall always be kept clear of climbers by the subordinates. 411

Permanent demarcation of plantations—The plantations raised will be demarcated permanently with stone slabs 1·05 m. x 45 cm. x 15 cm. with essential details inscribed on them. 412

Closure to grazing—Will be for a period of 10 years inclusive of the year of felling. 413

Fire protection—No special measures are necessary but the 2 m. wide exterior boundaries will be kept clear of all growth. 414

Jeep track and inspection paths—All series will have a jeep track. Plus, 2 m. wide, inspection paths branching out from the jeep track will be laid out and maintained and the internal boundary lines of the plantations kept clear to serve as inspection paths. 415

Control—A list of control records to be maintained has been furnished. 416

CHAPTER V—THE AFFORESTATION WORKING CIRCLE.

Object of management.—To restore the ecology of the degraded reserved forests alongside the national highways from Acharapakkam to Madras and the barren reserved lands in Tiruttani and Pallipat sub-taluk in Tiruvallur Range through reafforestation and thereafter mee the demands of the local populatihn for fuel and small timber from the planted areas. 417

General constitution—The working circle, for the first fifteen years, will include Acharapakkam R.F. in Madurantakam Range, Hanumanthaputheri, Paranur and Appur R.F.'s in Chingleput Range and Karimbedu, Gollalakuppam Puduthalam, Koramangalam, T.C. Kandigai North and South and Tadur R.L.'s in Tiruvallur Range. 418

Area—The total area of this working circle, i.e., the extent of the annual regeneration areas of the first fifteen years, is 18·00 sq. km of which 12·04 sq.km. will be planted up during the period of this plan. 419

Character of the vegetation—Southern Emphorbia scrub type, a description of which is given in para 58. 420

Division into planting serisa:—The working circle is divided into three planting series as follows :— 421

Name of series.	*Area in square km.*
Konasamudram	60·00
Tiruttani	60·00
Chingleput	60·00

Stockmapping—The blocks proposed for reafforestation were stockmapped and only area fit for planting included in the working circle. In the reserved land in Tiruvallur Range 23 out of the existing 30 blocks were stockmapped and area for planting over a period of 40 years selected. 422

Valuation of the crop—The areas included in this working circle do not contain any saleable growth. 423

Sylviculture system—Arificial regneration with suitable drought resistant timber and fuel yielding species. 424

Choice of species.—Acacia planiforms, A. ferruginea, Albizia amara, Pterocarpus santalinus, P. Marsupium and Hardwickia binata. 425

B

Rotation.—None of the plantations raised during this plan will come up for felling either during the period of this plan or the next. Hence the subject is left as an open question for the present. 426

Annual plantig area.—Is fixed at 40 ha. on an average in each series 427

Tabular statement of planting.—This has been drawn up for fifteen years and furnished. 428

The annual planting areas have been marked on the detailed management map of the working circle. 429

Survey and demarcation of the annual regeneration area.—Demarcation will consist of a two metre wide cleared line and small temporary whitewashed cairns constructed along the periphery. The entire coups as laid out on the management as will be surveyed and demarcated even though a part of it may be planted in the following year. The work will be completed by the end of April of the year of planting. 430–431

Soil Conservation measures.—Elaborate soil conservation measures have not been prescribed as a measure of economy, but gully plugging will be done wherever necessary. 432

Espacement—Will be 3 m. X 3 m. 433

Aligining and marking.—Will be taken up immediately after survey and demarcation. 434

Preparation fo the planting site.—All growth other than that of valuable species found within a radius of 75 cm. from the centre of the regeneration patch will be uprooted and discarded. If any useful three species is found growing in or near a regeneration patch uprootal of abnoxious growth will be confined to a radius of 75 cm. around such advance growth and the patch skipped for planting. Stones found at the site will be arranged in a crescent shaped bund on the lower side of the regeneration patch. In plains portions clearance and uprootal of valueless growth, burning and ploughing may be done. 435

Pitting.—Will be started with the first showers in June and will be completed by the end of the month. The size of the pits will be 40 cm. cube. 436

Planting season.—Will commence from June–July depending on the adequacy of rain for the purpose. Early planting is advocated for satsifactory results.. 437

Nursery.—Planting stock will consist of nursery raised container plants that are at least 40 to 45 cms. tall, with woody stemps and at least a year old. The containers will be polipots of size 22 cm. x 13 cm. and made of [illegible]00 gauge thick Polythene film. The potting mixture will be red loam and farmyard manure in the proportion of 4.1. Attenqant works such as fencing, watering, weeding etc. have been prescribed. 20% more number of container plants will be raised for beating up. 438

Seed requirements will be obtained through the Forest Geneticist, Coimbatore by placing timely indents on him. 439

Replacement of casualaties.—Will be done as and when they occur before the close of the planting season and during the third year. No beating up is contemplated during the third year. 440

Weeding and soil working—

First year.—Will be done these on at set of the north eastmonsoon to a radius of 60cm and a depth of 15 cm. soil working will be done with pickaxes.

Second year.—Will be done to the same dimensions during June–July.

Third year.—Will be done to the same dimensions but only around casualties replaced during the second year. 441

Tending of natural regenaertion—Will be done whereeer such regeneration exists. 442

Cutting back of obnoxious growth.—Will be done during the second year wherever found necessary. 443

Thinning.—The question of thinning will arise when the crop height reaches about 12,75 metres. Considering the low quality of the sites being planted up it is unlikely that any of the plantations will attain this height during the currency of this plan. Hence no thinning is prescribed. 444

Demarcation of plantations.—The plantations will be permanently demarcated with stone slabs 1.05m. X45 cm. X15 cm. with the year of planting and area inscribed on them planted at their four salient corners. 445

Fencing.—The regeneration area will be fenced wherever brushwood is available for the purpose. 446

Fire protection.—Fire is likely to be a problem in the Konasamudram and Tiruttani series. It is suggested that protection from fire be ensured through the co-operation of the villagers and intensive patrolling during the fire season. If this should fail then fire tracing to a width of five metres along the periphery is prescribed. Fire tracing will be completed by the end of February. 447

Closure to grazing.—Will be for six years inclusive of the year of regeneration. 44

Inspection paths.—Easily graded inspection paths 1 m. wide will be laid out in all plantations and maintained. 449

Control.—A list of control records to be maintained has been furnished. 450

CHAPTER VI—MINOR FOREST PRODUCE WORKING CIRCLE.

Objects of management.—To meet the demands of the local population for minor forest produce and increase the potential of such produce in the forests. 451

General Constitution.—Will cover all the forests under the control of the department in the division but not plantations raised under the Farm Forestry scheme. 452

Division of the area.—Each Range will constitute a Farm. There will thus be five farms named after the ranges as follows;—

Tiruvallur.

Tambaram.

Kelambakkam.

Chingleput.

Madurantakam. 453

Analysis and valuation of the crop.—Due to conversion of large tracts of forest into man-made forests the ntural Minor Forest Produce potential of the division has dwindled. The main items in demand are usufructs of Palmyra, climbers for baskets and grass of different varieties for brooms and tatching. Revenue and yields are poor ; but there is also pilferage everywhere which is difficult to control due to the past practice of traditional free removal and scattered nature of the forests. The raising of farms of medicinal plants in consultation with the Indian Institute of Horticulture Research, Bangalore is suggested. Raising of Palmyra along the boundaries of Forest Blocks has also been suggested. 454

A list of Minor Forest Produce in the division giving the scientific name, Tamil name, trade name and part that may be exploited has been furnished. 455

Agency of exploitation.—Honey, bees wax, deer horns and valuable remains of dead animals will be exploited departmentally whereas the other items will be exploited through contractual agency. 456

Period of lease.—Will be the fasli year from 1st July to 30th June. 457

Auction sales.—Will be held annually between the 15th of May and 15th of June. 458

Control.—A list of control records to be maintained has been furnised. 459

CHAPTER VII—THE GRAZING WORKING CIRCLE.

Objects of management.—The objects of management briefly are :

(i) To provide adequate pasture for cattle.

(ii) To limit the grazing capacity to the carrying capacity of the forests.

(iii) To regulate grazing and incidentally to derive some revenue.

(iv) To improve grazing facilities. 460

General Constitution.—The working circle will extend to the whole of the division except areas closed to grazing. 461

Areas closed to grazing fall under the following categories;—

(i) Areas closed permanently.

(ii) Areas closed for specified periods as per the provisions of this plan.

(iii) Areas temporarily closed as a punitive measure for unauthorised and wanton burning. 462

Permanent closure—

(i) Areas handed over to the State Silviculturist

(ii) Compounds of buildings located within forest limits. 463

Closure for specified periods.—This will include areas such as newly raised plantations and felled coupes which are to be closed for silvicultural reasons. List is furnished. 464

Temporary closure—
(i) Divisional experimental plots till the results are finally recorded.
(ii) Fire burnt areas provided the area closed at a time does not exceed 232·34 hectares in one particular locality. 465

Regulation of grazing.—The grazing year commences from the 1st July and extends to the 30th of June of the following year. A permit is valid from the date of issue till the end of the grazing year. A permit issued in a division is valid for the whole state. 466

Grazing fees.—The scale at which fees are to be levied is furnished. They were sanctioned in G.O. Ms. No. 17, Agriculture, dated 2nd January 1971 and came into force from 1st July 1971. 467

Goats will on no account be admitted into the forests for grazing. 468

Grazing fees will be collected departmentally. Permits will be issued by Range Officers and Foresters. 469

Removal of monsoon grass.—If there is demand for monsoon grass its removal will be regulated as per the orders of Government referred to in paragraph 131. 470

Improvement to watering facilities.—The desilting and repairing of 11 drinking water tanks for cattle in the division during the period of the plan has been drawn up and furnished. 471

Grazing notification.—The grazing notification will be published in the District Gazette every year in May. 472

Demarcation of closed areas.—Will be indicated on the ground by means of red sign boards written in Tamil at as many salient points as may be necessary. 473

Control.—A list of control records to be maintained is furnished. Control maps showing the areas permanently and temporarily closed to grazing will be prepared annually for each Range separatively. 474–475

CHAPTER VIII—MISCELLANEOUS REGULATIONS.

Section 1—Maintenance of boundaries.—The need for the proper maintenance of boundaries has been stressed. Arrears of work in the matter of rectification of defects prescribed in the previous plan have been listed out and prescribed to be carried out. 477–478

Section 2– Maintenance of inter-state boundary.– A part of this boundary between Tamil Nadu and Andhra Pradesh passes along Pullikundram R.L. and Allikuli R.F. of Tiruvallur Range. Its length is about 8·50 kilometres and width 6·10 metres, i.e., 3·50 metres in either state. The procedure to be followed in maintaining the boundary has been laid down in proceedings Miscellaneous No. 230, dated 16th March 1953 of the Board of Revenue, Madras. The work is to be done by this state and half the cost recovered from Andhra Pradesh. The Board has not specified the interval at which the work should be done. It is suggested that it be taken up once in five years. As of now the line is in need of clearance. 479–480

Section 3– Buildings.–The need for providing quarters for the executive subordinates yet to be provided with quarters has been furnished. It has been suggested that the District Forest Officer should press for higher allotments and construct quarters for all of them during the period of this plan. 481

In respect of special duty subordinates it has been suggested that quarters for them may be constructed if and when the posts are made permanent. 482

Proper maintenance of existing buildings and provision of amenities has been prescribed. The District Forest Officer will also see that all the compounds are provided with live hedges and planted up with useful trees. 483

Where water-supply to buildings is from wells sunk by this department the wells should be cleaned annually and properly maintained. 484

Section 4—*Management of stone quarries.*—There are a number of stone quarries in the division located mainly in Tiruvallur and Tambaram Ranges. In the former plan their management was dealt with in the Minor Forest Produce Working Circle but as they do not come under the definition of a 'Forest Crop' it is dealt with under Miscellaneous Regulation. The quarries are worked by contractual agency. 485

The management of stone quarries will be governed by the Minor Mineral Concession Rules. The powers of confirmation by the various Forest authorities laid down in G.O. No. 3014, Agriculture Department, dated 3rd October 1969 have been furnished. 486

The agency of exploitation will be contractual; a quarry will be the unit of sale but two or more quarries may be clubbed and sold as one unit if so demanded ; the lease period will be two years from 1st July and the fact that a unit consists of more than one quarry will not entitle the lessee to a longer lease period ; the lease period of two years was fixed in Government Memo. No. 78611/DV/71-8, Agriculture Department, dated 20th November 1972. 487–490

In order to contain the evil of quarrying it has been laid down that no new quarries will be opened without the specific orders of the Chief Conservator of Forests. 491

There are 139 quarries in the division the Range-wise break up of which is as follows :—

Tiruvallur	.. ..	33
Tambaram	.. ..	100
Chingleput	.. ..	1
Madurantakam	..	5

A detailed list of all the quarries has been furnished. 492

Section 5—Maintenance of Miscellaneous species plantations.—There are 41 partially sucessful miscellaneous species plantations in the division which are prescribed to be maintained. While special prescriptions are made the Teak and Casuarina plantations the following general prescriptions will apply to all the plantations :—

(i) Closure to grazing for period as the District Forest Officer may decide.
(ii) Clearance of boundary lines to a width of 2 metres.
(iii) Climber cutting.
(iv) Effective protection from theft and fire.
(v) Carrying out of necessary cultural operations in consultation with the Conservator of Forests. 493–494

Teak plantations.—There are 6 plantations of a total extent of 20–04 hectares raised between 1955 and 1959. They, are patchy and slow grown. They will be thinned and worked for poles on a tentative rotation of 40 years. 495–496

Casuarina plantations.—There are 18 plantations of an extent of 204·60 hectares. Pruning from the 4th year onwards has been prescribed. Necessary guidelines for carrying out this operation have been laid down. 497

Casuarina being a fuel crop the rotation will be the one of maximum volume production. Date for determining the rotation could not be collected for want of a complete series of age-graded plantations. It is suggested that the District Forest Officer lay out sample plots in different localities, record increment data annually and determine the rotation. 498

A detailed list of the plantations covered by these prescriptions is furnished. 499

Section 6—*Constitution and maintenance of Nature Reserves.*—Three such reserves have been constitutted as per the orders of the Chief Conservator of Forests. They are : (i) Allikuli R.F.—20 hectares, (ii) Nayapakkam R.F.—40 hectares and (iii) Guindy Park R.F.—345. 19 hectares. The last named reserve is under the control of the Wild Life Warden, Madras. 500

The prescriptions laid down by the Chief Conservator of Forests for the amangement of nature reserves are as folllows

(i) The reserve will be demarcated with suitable stone pillars except where the Reserved Forest boundary itsel forms the boundary of the reserve.

(ii) A journal will be maintained for each reserve under eight headings which have been furnished. 501

The first two nature reserves, which were selected by the District Forest Officer, have been marked onthe detailed management map. 502

Section 7—Preservation of plantations and natural forests in municipal towns-- As per the orders of the Chief Conservation of Dorests No. 53795/76-C4 dated 5—7—76—plantations and natural forests occurring within the limits of municipal towns should not be felled with a view to enhancing the landscape of such towns. A list of such plantations has been furnished. It has been prescribed that the Eucalypt plantations be thinned in order to maintain them in healthy condition. 503

Section 8—Suggestions regarding jurisdictional changes—Certain jurisdictional changes and appointment of additional staff is found necessary in view of the increased work load in Tiruvallur Range. 504

Forest Guards—At present there is one Forest Guard at Pallipat who can look after the work in the Konasamudram Series of the Afforestation Working Circle. Appointment of one Forest Guard for the Tiruttani series of the same working circle is suggested. 505

Reserve Watchers—As protection is a major problem in the Koasamudram and Tiruttani series referred to above the appointment of two Reserve Watches to assist the the Forest Guards, Pallipat and Tiruttani, the latter to be newly appointed, is suggested. 506

Range Officers—It is guggested that Kelambakkam Range may be partitioned between Chingleput and Madurantakam ranges and the Range Officer with his Range Clerk and Peon shifted to Titruttani to form a new Range to look after the reafforestation of the reserved lands in the Tiruttani and Pallipat sub-taluk portion of Tiruvallur Range. 507

Assistant Conservator of Forests—It is suggested that this officer be stationed at at Thiruvallur along with a Junior Assistant taken from the staff of the District Forest Office and his Peon and Jeep Driver and that the new Tiruttani Range and residuary Tiruvallur Range be placed under his direct control subject to the overall control of the the District Forest Officer in order to ensure the success of the regeneration works in these two Ranges.

580

Section 9—Conservation of Wild Life—There is very little of game in the forests of the division as understood by the forest and shortsman. The depletion of game is a corollary to the destruction of the habitat wrought by man and his cattle, quarrying and the raising of man-made forests on a large scale. It is expected to regain a part of its pristine status with the succesful implementation of the afforestsation programmes set out in this plan. 509

Besides what has already been stated in Section 3 of Chapter II of Part I mention deserves to be made of the following water fowl refuges under the control of the Wild Life Warden, Madras :—

(i) Chembarambakkam

(ii) Arappakkam.

(iii) Karikili. 510

erior to 1974 th game rules in force in the division werethose framed under clause (h) of section 21 of the Tamil Nadu Forest Act (Tamil Nadu Act V of 1882) but set January 1974 "The Wild Life (Protection) Act 1972" was extended to Tamil) Nadu based on this act the State Government framed "The Wild Life (Protection Tamil Nadu) Rules 1975" which were notified in G.O. Ms. No. 1084, Forests and Fisheries Departmrnt, dated 11th December 1975 and came into force on 21st January 1976. the Management of wild liefe in the division as in other divisions of the state is now govencel by these rules. 511

Period 1966–67 to 1975–76—Satistics pertaining to erforcement of the game durirg the period of the previous plan are fursrished.

A few practical suggestiors are made for implementation in connection with the conservation of wild life in the division. They are briefly :

(i) Provision of a step well and salt lick or the deer and black in Thaiyur and Kolathur R. Fs.

(ii) Artificially supplying fodder to these animals in suumer.

(iii) Introduction of Peafowl in Hanumanthaputheri, Appur and Vardalur R.F's, Koramangalam R.L. ard some of the well stocked Farm Forestry plantations.

(iv) Mairtenance of a close watch or the activities of Narikcravar gangs. 513

(v) Amply regarding subbordinates who detect poaching.

Section 10—Farm Forestry The objectives of this Five-year plan scheme have been explained in detail. The formulation and launching of the scheme was preceded by a reconnaisance survey in 1957–1958 as per which the extent of bolcks of 20·23 hectares (50 acres) anx more available for planting was 1,403·96 sq. km. Of this an an extent of 63 45 sq. km. has since been planted leaving a balance of 130451 to be plarted infutureyears. Ifthebalance aeraisfullyplantedupthe areacffcurestunder he maragement of this department will shoot up from 6·42 per cent to 23·40 per cent and brirg it on a par with the national average of 23‘1 per cent. A taluk-wise abstract of the area listed out as being available for planting, the area already planted up and thebalance area avilable for planting has been furnished whereas the detliled list os areas available is furnished in appendrx XVI 514–515

Planning programme—Planting under the scheme was commenced in 1960–61 and till the end of 1975–76 the average extent of the annual area works out to 3.79 sq.km. There is a strong case for this being stepped up. As the annual target depends on the financial allotment under Five–Year Plan Schemes the District Forest Officer should press for higher allotments every year 516

Method of treatment—The silvicultural treatmen for new areas will be concentrated artificial regeneratihn preceded by clerance, uproo al and tractor ploughing in lands other than tank beds. In the case of existing plantations the simple coppice system will be followed withrestocking of sizable blanks with suitable species if edaphic conditions permit 517

Choice of species—In sites liable to water-logging it will be Acacia arabica, on saline alkali sites Acacia leucopholea or such other specie that willthrive on such soils and in other areas it will be Eucalyptus teretecornis. Cashew is not recommended because of low yields and difficulty in protecting thecrop in smallscatterred plantations. Tank beds liable to prolonged submersion will not be planted up but heir toreshores will be planted if they do not suffer from the same drawback 518

Espacement—Will be 2 m. x 2 m. for Eucalypt and 3.50 m. x 3.50 m. for other species 519

Reegenration technique—Will consist of planting container plants in 30 cm. cube pits with the commencement of tye south-west showers depending on the type of area and pattesn of water storage if they are tank beds. The nursery practice and subsidiary silvicultural operations to be followed have been dealt with in detail in the chapters on the Eucalypt Plantations and Afforestation Working Circles and may be followed with such modifications as found necessary 520

Rotation—Will be ten years for Babul and eight years for Eucalypt as is the case over the rest of the state. For other species the rotation will be fixed in sonsultation with the Conservator of Forests 521

Expioltation—Cashew usugructs will be exploited departmentally. The othe plantations will be exploited through contractual agency but if allotted to industr the condions of exploitation will be fixed by Government .. .. .. rv 522

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The by-products of Babul may be tapped to make the scheme mort remunerative. Babul gum is a good substute for gum arabic of commerce and the bark contains a fair amount of tranin. The pods make good fodder for catlle and goats oould be allowed to graze inolder plantations on levey of nominal fee 523

Closure to grazing —Will be five years in the case of newly raised plantations inclusive of the year of planting and three years in tne case of felled plantations. 524

Sharing of revenue with Panchayats—The revenue from plantations raised on lands vested with Panchayats will be shared with them epually although the entire expenditure on raising and maintaining the plantations will be borne by the Forest Department—G.O. Ms. No. 117, Agriculture, dated 12th January 1971. 525

Control—The District Forest Officer will maintain a Gontrol book, Record of Works, Control Journal, Plantations and Nursesy Journals and a map showing the location of the plantations 526

A map of the district showing the location of the existing plantations is appended to this plan 527

Two statements one showing the yield from Cashew plantations from 1972 onwards when departmental collection was introduced and the other the prices fetched and yeiled obtained from felled Encalpt plantations from the inception of the scheme upto 1975-76 have been furnished 528

Section 11—Control—Information on the purpose served by each control record and map and the manner in which each is to be maintained has been furnished 529-542

A Copy of the entries made during the year in the control book, the record of works, register of devissions and the control journal will be submitted to the Conservator of Forests soon after the close of the financial year along with a copy of the fire map for scnitiny. The control records and maps will be posted regularly and made available to the conservator of Forests for check at the time of office inspection 539

Section 12—Plantation and Nursary Journals—This lournals are to be maintained wherever antifical generation operations are involved. The manner in which the are to bt maintained has been set out 540-542

Both the journals will be maintained by the Range Officer personally and copies of the same will be maintaioed in the District Forest Office 543

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CHAPTER IX.

ESTABESMENT AND LABOUR.

Section 1—Establishment—The appointment of one more Forest Guard and two Reserve Watchers has been suggested for tackling the reafforesatation work In the Reserved Lands in Tiruvallar Range Redeployment of the Range Officer Kelambakkam and his office staff and creation of a new Range at Tiruttani has been suggested. 544

A statement showing the jurisdiction of existing section and Beats is furnished in Appendix XIV 545

Section 2—Labour—There is no dearth of skilled and unskilled labour in the division 546

20/84
387/65
X 20/14
190/88
104/56

REFERENCE

REFERENCE